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THE EMBALMERS' SUPPLY CO.

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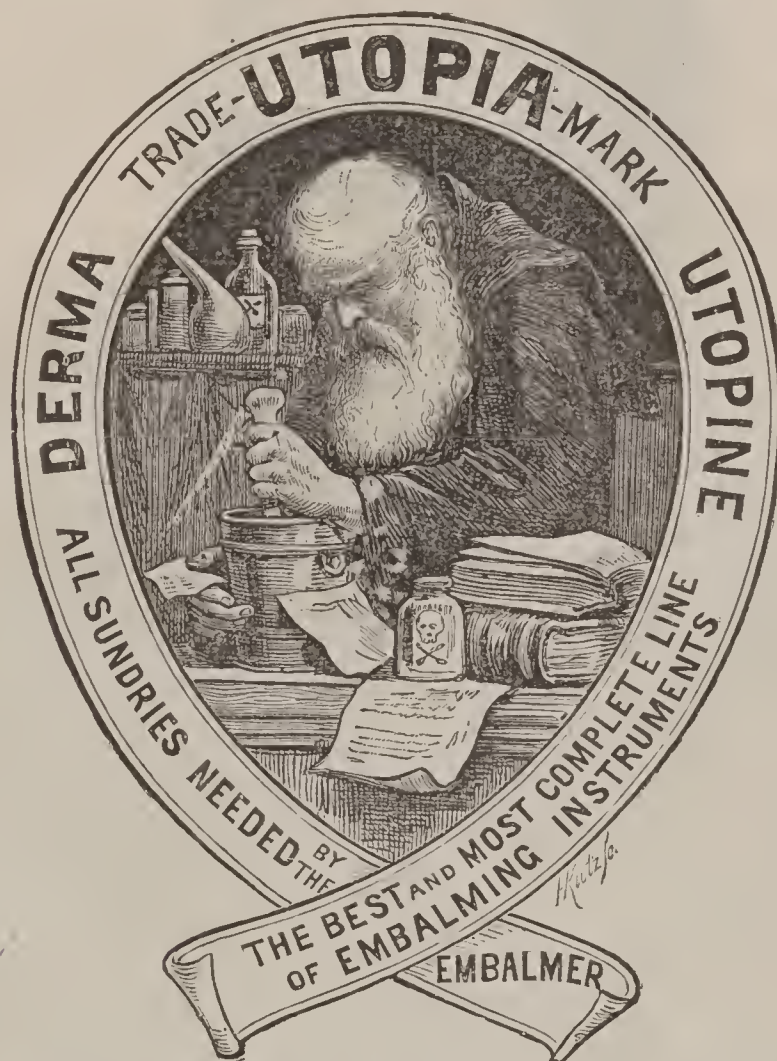
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THE EMBALMERS' SUPPLY CO.,

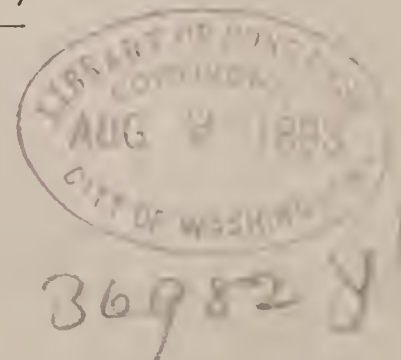
— SUCCESSORS TO —

DOLGE & HUNCKE,

Westport, Conn.

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C. B. Dolge.

Introduction.



THE appearance of our first catalogue was greeted by the Undertakers of America with so much genuine pleasure, and the demand for copies increased with a rapidity so far beyond our most sanguine expectations, that it has now become incumbent upon us to issue a second edition of the work. Moreover, a great many new appliances, and perfected instruments, rendered necessary by important modifications in the process of embalming, have been introduced, together with more powerful fluids, and energetic disinfectants, some of them non-poisonous, since the printing of our first edition; and these facts alone would have compelled us to present ourselves for the second time before our numerous patrons, as we have always, and without swerving from our aim, kept the lead in all practical improvements and useful discoveries.

Our readers will be much surprised to find the list of instruments, specialties, fluids, and disinfectants, which we manufacture, so much enlarged; and many of the latest innovations must prove entirely new to some; but care has been taken to explain lucidly and at length, in the following pages, the specific use of each article, its merits, and its well authenticated claims to excellence in every conceivable form.

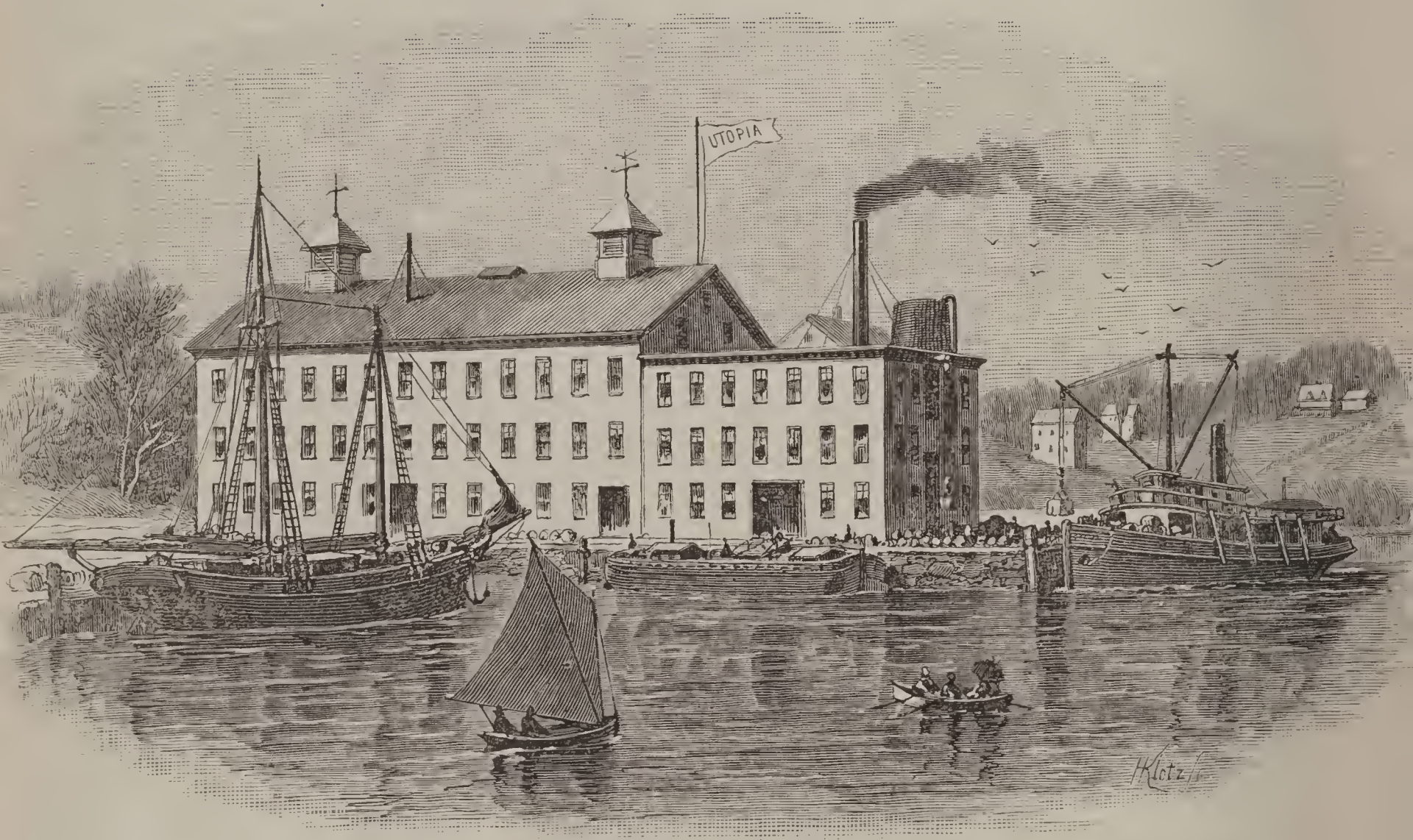
We take laudable pride in presenting to the professionals of this hemisphere an array of appliances of all sorts, far surpassing any attempt of the same kind heretofore made by ourselves, or any other firm in this country.

We need not expatiate upon the intrinsic value of our products, and the honest quality of our goods; our old customers have long been convinced of this fact; our new patrons will soon be forced to admit its truth.

The somewhat arid features of this work, like the former one, have been relieved by a short compendium of useful information about the process of Embalming, which we sincerely hope will meet with the cordial endorsement of the American Embalmers.

THE EMBALMERS' SUPPLY CO.

MAIN OFFICE AND FACTORY,
THE EMBALMERS' SUPPLY CO.,



WESTPORT, CONN.

BRANCH: 23 UNIVERSITY PLACE, NEW YORK, N. Y.

ADDRESS ALL COMMUNICATIONS TO THE MAIN OFFICE.

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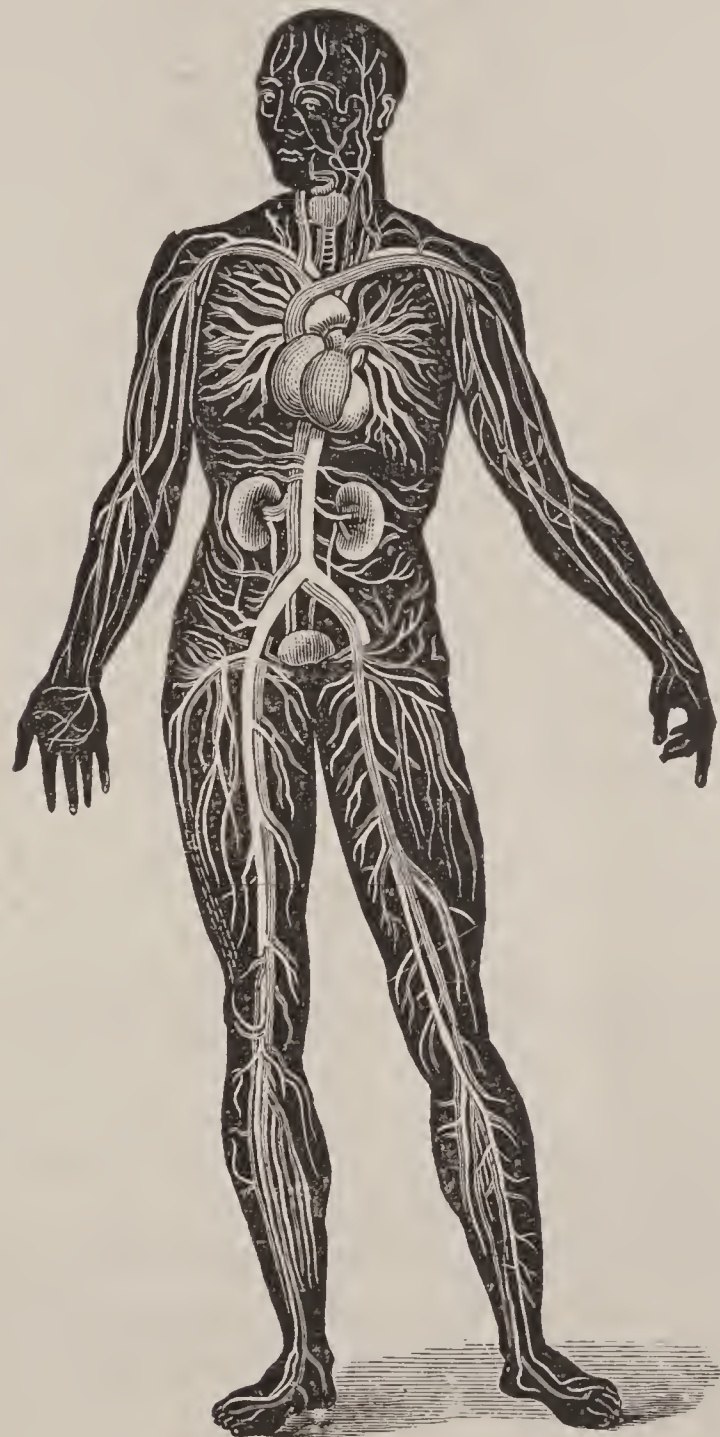
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Process of Embalming.



HOW TO LOCATE AND RAISE THE ARTERIES.



TO INJECT THROUGH THE RIGHT COMMON CAROTID ARTERY.

Turn the head of the subject towards the left side, and incise the skin of the neck for a length of about two inches on the inside of the wind-pipe, commencing near the junction of the breast-bone and collar-bone, and extending upwards in a straight line with the apex of the jaw-bone; then separate carefully the fat and tissues, and the artery will be found between the wind-pipe inside, and enclosed in the same sheath with the internal jugular vein and pneumogastric nerve, outside. Separate with care the artery from the vein; cut longitudinally through the coats of the artery, and to its centre, for about one quarter of an inch, introduce the tube of the Syringe or Atmospheric Pump *downwards* into the artery; tie the artery firmly around the tube, then pass the silk wrapped flexible tube downwards through the internal jugular vein into the right auricle of the heart, and pump the blood out; then inject a certain quantity of fluid into the arteries and afterward pump more blood out of the heart; and continue on in this manner, alternately injecting fluid into the artery and pumping blood out of the heart until the arteries have been injected with a sufficient quantity of fluid.

After the injection is completed, tie up the artery above and below the point of injection, sew up the wound neatly, and apply a piece of adhesive plaster over the scar.



TO INJECT THROUGH THE BRACHIAL ARTERY.

The brachial artery passes down the inner side of the arm to the bend of the elbow, where it divides into the radial and ulmar arteries.

In its course downwards, it is close to the humerus (bone of the arm). To its inner side is the ulmar nerve; to the outer side the bicep muscles; in front it has the basilic vein, and is crossed by the median nerve, and in the sheath, with the artery, are found two veins, called the *Venæ Comites*.

To reach the artery, extend the arm at a right angle with the body, with the palm of the hands upwards; cut through the skin for a length of about three inches, at equal distance between the arm-pit and the bend of the elbow, between the border of the inner and outer muscles of the arm. Separate the fat and muscles until the sheath containing

the artery and the two venæ comites are reached; then, carefully detach the artery from the two veins, and bring it to the surface, cut the artery open; introduce the tube of the syringe into the artery towards the head of the subject, and after having raised the basilic vein, push the silk wrapped tube into the right auricle of the heart and proceed with the rest of the operation, as explained for the Carotid Artery.

Whenever it is impossible to use the basilic vein for removing blood from the body, insert the cardiac needle into the right auricle of the heart, and use it in the same manner as the silk wrapped tube.



THE FEMORAL ARTERY.

It passes down about the inside middle of the thigh, from Poupard's ligament, and proceeds in a spiral line to the lower third of the thigh, where it becomes the popliteal artery. The femoral artery and vein are enclosed in a strong sheath, in the upper part of the thigh; the vein lies on the inner side of the artery; but lower down gets altogether behind it, and inclines to its outer side.

To reach the femoral artery, make a cut through the skin, commencing about three inches below Poupard's ligament, and extending downwards for about the same length, between the muscles, about the middle of the inner side of the thigh. Separate the muscles with the fingers until the sheath containing both the artery and vein is reached. Then take hold of the sheath and detach the artery from it, and afterwards separate the vein from the artery, pass the flexible tube upward into the artery, and whilst gradually drawing out the tube pump the blood which it may contain; and make ready to inject the artery.

Open the femoral vein, pump the blood out of it by means of a flexible tube, inject fluid into the artery, and proceed in the same manner as when injecting the carotid artery.

EMBALMING THE BODY.

Lay the body on the cooling board, and, if purging, assist the flow of the substance by bringing together and holding the lower ribs under the left hand ; at the same time pressing with the right hand upon the region of the stomach and bowels.

If the body is purging, never force cotton in the throat or in the nostrils to prevent the egress of matter ; as in the first place, it would stop the purging for a few moments only, and in the second place, it might cause a swelling of the neck and face and produce discoloration.

After the purging process has been completed in the above manner, raise the body immediately upon the cooling board from the hips upwards, in such a way that the head and shoulders may be elevated about 14 or 15 inches above the level of the feet. This will cause the blood contained in the upper part of the body to gravitate towards the lower extremities, and will assist in removing discoloration, should it already have taken place.

This being done, and if the remains be that of a person whose death was caused by some disease which would leave the arteries congested with blood, and also, when the ears, neck and part of the face present symptoms of deep discoloration, the arteries must be injected as follows :

Raise the brachial artery and basilic vein, by following the directions previously given, and using the director and bistouri, to cut through the fascia covering the muscles, in order to avoid the risk of puncturing either the artery or veins prematurely ; then pass the artery binders under the artery, and also under the basilic vein, and make everything ready to inject the artery.

Raise the femoral artery and vein, introduce the draining tube upwards into the femoral artery ; then commence to inject the brachial artery, and after all the blood has passed out of the femoral artery, and the fluid appears as clear as when injected in the brachial artery, then the draining tube is withdrawn and the femoral artery is tied up.

Then introduce the draining tube into the femoral vein, connect the tube with the suction side of the pump, open the basilic vein, and resume the injection of the brachial artery, pumping the blood out of the femoral vein at the same time until the arteries have been thoroughly injected. When the injection is completed, withdraw the arterial nozzle from the brachial artery, and the draining tube from the femoral vein ; tie all the arteries and veins by means of the arterial binders, sew up the wounds neatly, and apply a strip of the adhesive plaster to conceal the scar.

Take the Renouard needle, introduce it into the abdomen about two inches above the navel, and push it towards the left side of the body into the stomach, pressing upon that organ at the same time in order to have the needle penetrate it more easily ; connect the needle with the suction side of the pump, and pump out all the gases and liquids contained in the stomach.

When as much as practical of the contents of the stomach have thus been removed, withdraw the needle partially and push it into the bowels in all directions, withdrawing

it partially every time its direction is changed, and pressing upon every part that is being perforated by the needle, and also pumping out the contents, liquid or gases, from the different points which are being penetrated by the needle.

When all the gases and liquids contained in the stomach and bowels have thus been expelled, connect the embalming needle with the atmospheric pump, reintroduce it into the abdomen through the hole previously made, push it successively into the cavities of the pleura right and left, the stomach, and the intestines, injecting as much of the “**Utopia**” into those parts as they will contain.

Introduce the stomach tube into the nostrils (should the mouth be closed), and inject the lungs and air passages with the “**Utopia**” embalming fluid. If the mouth be still open, the nasal tube can be passed through the œsophagus, and the stomach be injected in the same manner.

In diphtheria, membranous croup, or where it becomes impossible to inject the fluid in the air passages by ordinary means, introduce the infant trocar in the throat, below the Adam's apple and inject the fluid through it.

If some slight patches of discoloration still remain in the face, they can be removed by injecting the bleaching fluid under the skin by means of the hypodermic needle. After which the face, ears and neck may be covered with a sheet of absorbent Lintine saturated with bleaching fluid.

If, on the day following the embalming of a body in the above manner, gases should again distend the stomach and bowels, introduce the Renouard needle into the abdomen through the opening previously made, pump out the gases and the fluid formerly injected, and fill the cavities again with a quantity of new fluid.

In cases where the body is that of a stout fleshy person, it may prove necessary to let the arterial tube remain in the artery, place a cap or thimble over it to prevent the escape of the fluid ; and several hours afterwards push into the arteries a second injection, the quantity of which must be regulated by the size of the body ; and the amount of fluid previously injected.

This process of embalming, which is the most complete and reliable known, still lacks many details which the limited scope of this work prevents us from publishing. Moreover, our task would prove a thankless one, as a mere description would but feebly explain operations which must be practically demonstrated in order to be fully understood ; and a misapprehension of the work might be more detrimental than useful.

The *modus operandi* usually followed in the injection of the arteries has been greatly abridged by the use of the atmospheric pump, which allows the operator to push the fluid in the arteries, alternately with the pumping of the blood out of the veins ; but great as this improvement must appear at first sight, it is farther surpassed by the use of the Dolge automatic injector and the Dolge aspirator ; two instruments entirely distinct and separate, which, however, are employed at the same time, and which by so doing permit the embalmer to proceed with all auxiliary details of the work, such as removing the blood, and doing the cavity work, whilst the arteries are being injected at any desired speed. It would be a fatal mistake to suppose that the removal of gases from the thoracic cavities, and the abdominal viscera, and the subsequent injection of those parts with fluid can be carried on successfully and without detriment to the general happy results of the operation by inexperienced practitioners. There is probably no part of the work which demands more intelligent care and knowledge of the situation of the large blood vessels and deep seated organs than the manipulation of the needle. For instance, should an arterial trunk or any of its main branches be lacerated by the sharp point of the needle,

a great part of the fluid which has but just been injected into the arterial system, must escape at that point into the environing cavity, before it has had time to penetrate through the terminal branches of the arteries into the intricate network of the capillary circulation. If on the other hand this mutilation of the circulatory system has taken place before the arteries have been injected, then a result still more serious must be apprehended, as the fluid would perforce find an exit at the ruptured point, and would enter but imperfectly, if at all, according to the extent of the lesion, the rest of the arterial system.

If the reader will examine critically the process of embalming as above given, he must admit that notwithstanding the paucity of details forcibly suppressed by the constricted space at our command, it is complete ; and contains all the requirements for a successful issue. Again, it is impossible to depict in a graphic manner the mechanical portion of the work ; this must be practically illustrated, or else it conveys to the uninitiated but a distorted comprehension of the reality.

And last, but not least, the necessity for a preparatory course of theoretical instructions, as given in the United States College of Embalming, must impress itself firmly on the mind of those who have carefully perused this brief disquisition, in order to place the operator, or the student, in such a condition that the practical part of the work becomes on his part but a mechanical application of well understood and clearly conceived truths and principles, leading to certain, well defined results.

A. RENOUDARD,

Demonstrator of the College.



EMBALMING FLUIDS,
DISINFECTANTS,
CHEMICAL COMPOUNDS,

—AND—

CHEMICALS.





STANDS WITHOUT AN EQUAL AS AN EMBALMING FLUID.

This is not an idle boast, but a well attested fact as undisputable as the laws which govern the universe.

When used according to the directions given in the process of embalming the most satisfactory results will be obtained.

IT IS A POWERFUL ANTI-PUTRID,

arresting instantly the progress of decay and completely neutralizing and destroying the offensive and deleterious gases which are produced by putrifying animal substances. When injected into the arteries it renders the tissues firm and bleaches the parts with which it comes in contact.

UTOPIA IS AN ENERGETIC AND POWERFUL
DISINFECTANT,

it kills instantaneously all the germs of contagion and the deadly ptomaines generated by the decomposition of bodies.

Utopia, easily and quickly removes the most foul odors, and a body however offensive it may be soon loses its nauseous smell when properly injected with **Utopia**.

It is almost useless to expatiate at greater length upon the merits of **Utopia**; the best embalmers in the country have learned to appreciate its unequalled properties, and it has found especial favor with all the undertakers whose aim is to avoid the risks of failure. In a word

UTOPIA HAS BECOME THE FAVORITE EMBALMING PREP-
ARATION OF ALL LEADING PROFESSIONALS,

as can be easily proven by the perusal of the trade papers in which can be seen unsolicited testimonials every month, given to us by our appreciative patrons.



PRICES OF UTOPIA.

	Per Gallon.
47, 25, 15 or 10 Gallon Kegs	\$1 00
5 Gallon Keg or 1, 2 or 3 Gallon Buckets.....	1 25

TERMS ON ALL GOODS, 5 PER CENT. DISCOUNT IF PAID FOR WITHIN 30 DAYS, OR 60 DAYS NET.

Renouard Embalming Fluid

is beyond any doubt the best embalming fluid on the market, and recommends itself by its preserving qualities, and the valuable property of keeping the natural color of the complexion, when injected arterially and applied externally at the same time, without producing the ghastly whiteness and the lividity of the lips so often met with, and is now used exclusively by the leading undertakers.

5 gallons or less.....	\$2.50 per gallon.
10 “ or more.....	2.00 “

Knowles' Cavity Fluid

is destined to fill the place where other fluids do not prove efficient in strength to overcome bad cases, such as dysentery, childbirth, typhus, etc., etc. It can be used in connection with our other fluids and most of the fluids on the market. It is *the* fluid to use for those who wish to inject the Cavities only, also for those who wish a stronger fluid for the Cavities than they are able to find in a good arterial fluid. We compounded the Cavity fluid for Mr. Horace B. Knowles, one of the oldest and best embalmers known. A happy combination of the Renouard fluid for the arteries and the Knowles fluid for the cavities, has in every instance given the greatest satisfaction.

This **Cavity Fluid** has been on the market now for about two years and has proven to be all that we claimed for it.

It is used by those who do cavity work only, in preference to all other fluids, as they found it safer and quicker in its action, than any other compound used for that purpose.

It cannot be used in the arteries or as a face wash, as it is too strong.

5 gallons or more	\$1.00 per gallon.
-------------------------	--------------------

PHORENCINA.

The Most Powerful Known Preservative for Animal Substances ; the Acme of Success in the Field of Scientific Investigation for the Perfect Embalmment of Bodies.

STRICTLY NON-POISONOUS.

Totally Harmless ; No apprehension from Carelessness in its Handling, or Employ, need be entertained by the Embalmer, to his health.

As a Disinfectant it is A MOST ENERGETIC DESTROYER of Contagious Germs, Noxious Gases, and a Safe Cauterizer of Septic Wounds, and should therefore be used exclusively on contagious and infectious cases in preference to other fluids. It should not be brought in contact with any colored fabrics, as it will bleach the same.

PHORENCINA

Will Instantly Arrest Decomposition where all other known Fluids are Powerless, and in a short time Removes the Green Color of Putrefaction.

It also removes all objections to the embalming of a body, even before the Physician's certificate can be obtained ; in cases where the condition of the body is such as to demand immediate care ; as the use of " Phorencina " does not alter the color of the organs, conceal ante-mortem lesions of the viscera, or obliterate traces of toxicants. Thereby affording all facilities for medico-legal investigations that may result in criminal conviction. As a Cavity Fluid it is without a rival. It works instantaneous, killing gases and all bad odors the instant it is brought in contact with them.

DIRECTIONS.

Phorencina produces astonishing results ; when injected in all cases, both in the arteries and the cavities. First, place the body on the Cooling Board, in the usual elevated position, then pump the blood out of the veins, by means of the Flexible Silk-wrapped Tubes ; or out of the heart, according to the necessities of the case. Afterwards inject the arteries, still pumping out the blood, alternating with the injection of the arteries until the arterial circulation has been filled. And last, remove all gases from the cavities of the chest and the abdomen, observing the usual precautions and inject the fluid into these parts in the customary manner.

Do NOT EMPLOY " PHORENCINA " FOR EXTERNAL APPLICATION, but use the Hypodermic Fluid or Face Wash instead.

" **Phorencina,**" price\$2.00 per gallon.

" **Phorencina** " is shipped mostly in cases, containing twelve one-half gallon bottles, but if desired it can be shipped in kegs ; but in such a case it must be drawn off in bottles as soon after its arrival as possible.

EMBALMING FLUID POWDER.



Our object in placing this mixture before our patrons, is to supply those who may desire to manufacture their own embalming fluid, with an article of better quality, of more effectiveness, and at a "more moderate price" than any other similar product now offered for sale.

We claim for our Embalming Fluid Powder, that it is composed of chemically pure constituents, which by actual proof give it a strength of about 15 per cent. greater than that of any other rival compound of the same nature. But although a superior article in its way, it does not compare in efficiency with any of our embalming fluids, and we could not possibly jeopardize our honest repute by guaranteeing its effects as fearlessly as we do that of our other embalming preparations.

The embalming fluid is prepared by simply dissolving one and a half pound of the powder into a gallon of water, hot if obtainable, as the solution of the powder will be more rapid.

Neither atmospheric conditions nor climatic changes will affect the antiseptic properties of either the powder or its solution.

Fifty pounds will make thirty-three and one-third gallons of embalming fluid, costing \$10.00.

The Embalming Fluid Powder is put up in 50, 100 and 200 pound boxes, and is sold at the price of 20 cents per pound.

DIRECTIONS:—Take 50 pounds of Embalming Fluid Powder, put the same into a barrel, then add 32 gallons of cold, or better, warm water, stir for five minutes, and stir occasionally afterward until the chemicals are well dissolved. After it has well settled (about two hours), it is ready for use.

“ANTIDOTINA.”

—A MOST—

POWERFUL DISINFECTANT.

Strictly Non-Poisonous.

—IT IS A—

Concentrated Solution of Bi-Sulphites, Overcharged
with Sulphur Dioxyde,

—AND IS THE—

STRONGEST DISINFECTANT

EVER OFFERED TO THE PUBLIC.

It is the acknowledged destroyer of all and every infectious and contagious germs; kills all forms of low organisms; the coma of Asiatic cholera; deleterious emanations, and an absolute preventive against the spread of contagious disease. It is also invaluable for use in

SICK ROOMS, CELLARS, SLAUGHTER-HOUSES.

STABLES, WATER-CLOSETS, WASH-

BOWLS, CHAMBER VESSELS, Etc.

And for Washing the Hands and Clothing when Soiled with Infected Matter.

It should not be used on colored fabrics, as it bleaches the same.

FULL DIRECTIONS WITH EACH BOTTLE.

PRICE, 50 CENTS, QUART BOTTLE.

UTOPINE AND ATOMIZER.



No. 107.

A FRAGRANT PREPARATION,

Highly esteemed by the large number of persons who are using it.

IT IS A POWERFUL DISINFECTANT,

A certain destroyer of contagious germs and bacteria. Unlike other disinfectants of the same class, which simply disguise foul odors by substituting a stronger fragrance of their own. Utopine neutralizes mephitic gases, and renders them harmless. It is certain death to all insects and vermin, and when sprayed in a room reeking with nauseous smell and polluted atmosphere, it renders the air pure and wholesome.

THE ATOMIZER IS OF THE BEST WORKMANSHIP,

and composed of the choicest material, and therefore is not likely to become deranged in its working parts.

The Atomizer must always be removed from the bottle when not in use, and the bottle tightly corked.

No. 107.	Utopine (formerly called Kreotiline), small bottle, with Atomizer.....	\$1 00
No. 108.	“ pint	2 00
No. 109.	“ quart	3 50

DISINFECTING CONES.

A SAFE
AND SURE
FUMIGATOR.



GERMS OF
CONTAGION
DESTROYED
COMPLETELY

DISINFECTING CONES.

No. 142. Disinfecting Cones. These cones are composed of the most powerful substances to be found in the long list of disinfectants. When used according to directions, they destroy *completely* the germs of contagion or of infectious diseases which are to be found in the clothing, or the apartments of persons who may have died from scarlet fever, diphtheria, measles, typhus, typhoid fever, etc. These cones, manufactured from the formula of A. Renouard, demonstrator in the U. S. College of Embalming, are not intended to produce a pleasant odor, but their function is simply to destroy the deadly germs of infection and contagion ; and for this purpose they will be found superior to any other chemicals yet employed. Their use is safe, and devoid of all the risks attending the burning of sulphur.

DIRECTIONS.—Remove all gilt objects from the room, invert the bottom of the box containing the cone upon the lid, place the cone in the box on its broad base and ignite the apex, and retire from the room, leaving it closed tightly for about one hour. Afterwards allow free ventilation to allow an exit for the fumes. Clothing of all sorts can be disinfected in the same manner by leaving in the room during the process of fumigation. It is also advisable to use this disinfectant in any death chamber, even if death was caused by a non-contagious disease, as it purifies the atmosphere of the room.

Six cones placed in different portions of the room will be found sufficient to disinfect a room containing 36 cubic yards or about 9x12 feet, ordinary height.

Price, 12 boxes for\$1 00

No. 141. Disinfecting Liquid for the Hands. It removes instantly the foul odor or fetid smell, which remains so persistently on the hands after laying out, washing or embalming a corpse. It is instantaneous and certain.

DIRECTIONS:—Mix one tablespoonful of the liquid in a pint of water and wash the hands in the solution previous to using soap and water. Compounded after A. Renouard's receipt.

Price, in pint bottles.....35 cents.

No. 112. Utopia Salve. A highly antiseptic salve, with which the hands are annointed previous to embalming a body. It fills the pores of the skin, covers any abrasions or cuts, and prevents the blood, or liquids of the subject to be embalmed, from being absorbed by the operation.

Price, per box50 cents.



No. 112.

HYPODERMIC SOLUTION AND FACE WASH.

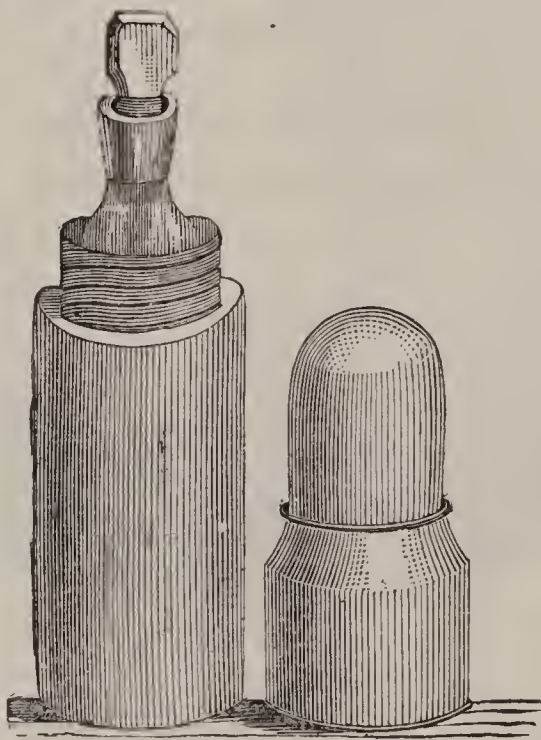
No. 139. Hypodermic Solution and Face Wash. When used subcutaneously by means of the hypodermic needle and bulb, removes almost immediately slight discolorations, dark rings under the eyes, brown spots on the face and hands, and prevents the peeling off of the skin. As a face wash, or when absorbent cotton saturated with it is applied to the face, it preserves the natural color of the features and the carnation of the lips. Apply pure in all cases. Manufactured from A. Renouard's formula.

Price, per quart\$1 00
 “ “ gallon 3 00

KAUTERION.

No. 114b. A liquid possessing strong cauterizing properties ; it is intended to cauterize wounds received in dissection, embalming, or autopsies. The liquid is contained in a small drachm bottle, provided with a ground glass stopper, which terminates in a small glass rod constantly dipping in the liquid. The whole is enclosed in a neat hardwood box, provided with a lid, which when screwed down presses upon the stopper in the bottle and prevents any escape of the liquid.

When needed for use, the stopper is taken out and the small drop of liquid which accumulates at the end of the glass rod is allowed to fall in the wound. The effect is instantaneous, the parts are cauterized, and the septic poison which may have inoculated is immediately destroyed. In replacing the stopper after opening it should be sealed tight with melted wax.



No. 114b.

No. 114b. Kauterion. Price, per bottle25 cents

WHAT KAUTERION COULD HAVE PREVENTED.

“ Brother Samuel N. Cole, of Canton, Pa., died on June 11, from blood poisoning. He had a cut on his finger, and while attending a body he got his finger in contact with the corpse.”— *Our Paper*.

No. 164. Vitrum or Liquid Cement.—This is a colorless liquid to stop the leakage of arteries, or the escape of the fluid out of the mouth in pulmonary diseases. See directions on bottle,

Price, Pint Bottles50 cents.

ANTISEPTIC LOZENGES.



These Lozenges are a sure protection against all dangers of contagion, by inhalation of poisonous germs through the air passages and the alimentary duct.

By placing a few of these Lozenges into the mouth, and allowing them to dissolve slowly, a perfect immunity from diphtheria and other infectious diseases is insured.

No. 162.—Price, per dozen boxes, \$1.00.

FALCONY'S DESICCATING OR DRY PROCESS.

This process facilitates the preservation of bodies, after an autopsy has been performed. In this instance all blood and liquids are removed from the cavities, which, with the internal organs, are sponged dry ; and afterwards the mixture, as given below, is packed closely around the organs until the cavities of the chest and abdomen are completely filled.

MIXTURE.

Two (2) pounds of Falcony's Mixture, ten (10) pounds of salt, one (1) pound of saltpetre.

In cases where putrefaction has progressed so far as to render useless the progress of embalming, pump all gases and liquids out of the cavities, and fill them with fluid. Then lay the body in a box on a bed of the mixture, given below, surround it and cover it with the same mixture so that a layer of it, about three inches in thickness, intervenes between the body and the air. All bad odor will thus be prevented, and in a few days the body will be mummified. To obtain the best results, the mixture ought to come in immediate contact with the remains.

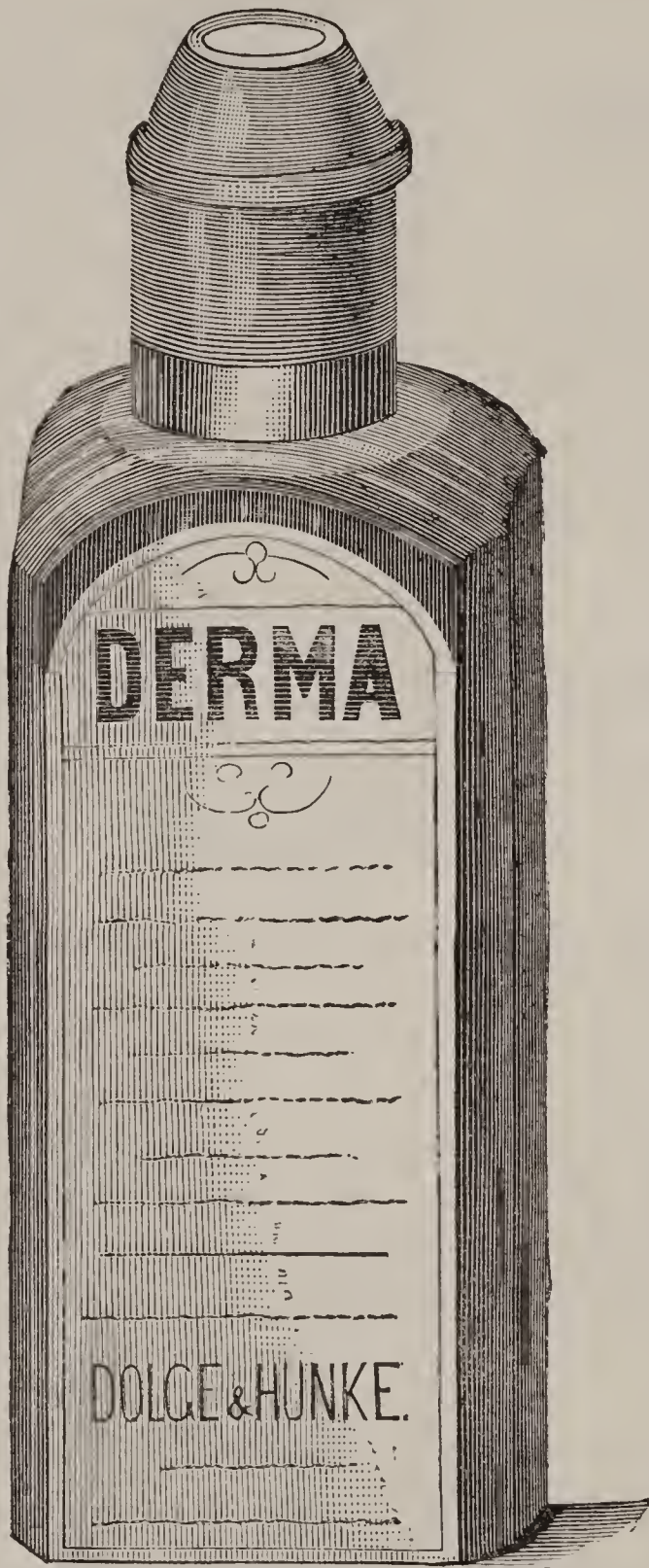
MIXTURE.

Five (5) pounds Falcony's Mixture and about ten (10) pounds of sawdust.

No. 173.—Falcony's Mixture, 5 lb. tin can.....\$1 00

DERMA.

I want to express to you my gratification on the results produced by the use of “*Derma*,” on the face of a subject that had the cuticle or outer skin entirely scalded from the face and body by the explosion of a large boiler. After applying “*Derma*” the results were almost spontaneous in supplying a new



No. 110.

skin, as it were, producing a natural and life-like appearance to a face that was lacerated beyond recognition. Cannot successfully prepare a body for burial without the use of it.. It will do all that you claim for it.

J. P. WISE, of W. Wise & Son.
Bucyrus, O.

Derma is an invaluable preparation, which, when applied to the lips or eyelids, binds them firmly together, after holding with the fingers for a few minutes.

Derma, when applied upon scars, excoriated or burnt surfaces, forms a new skin, which conceals the denuded spots. The face and hands of a corpse coated with a thin layer of **Derma** are effectually preserved from the disintegrating influences of the atmosphere, and the slipping or peeling off of the skin is thus prevented.

The bottle containing “*Derma*” should always be kept tightly corked.

No. 110. Derma , One Bottle.....	\$1 00
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UTOPIA SILVER PLATING.



No. 111.

No. 111. Utopia Silver Plating is a liquid for re-silvering plated articles of brass, such as carriage and hearse lamps and mountings, and embalming instruments where the original plating has been worn off. Directions for using will be found on the bottle, which should be kept tightly corked. Price..... \$0 50

VITA MYSTICA,

An Elegant Preparation to Restore the Natural Color

Of the Lips and Cheeks, and Remove the Paller of Death.



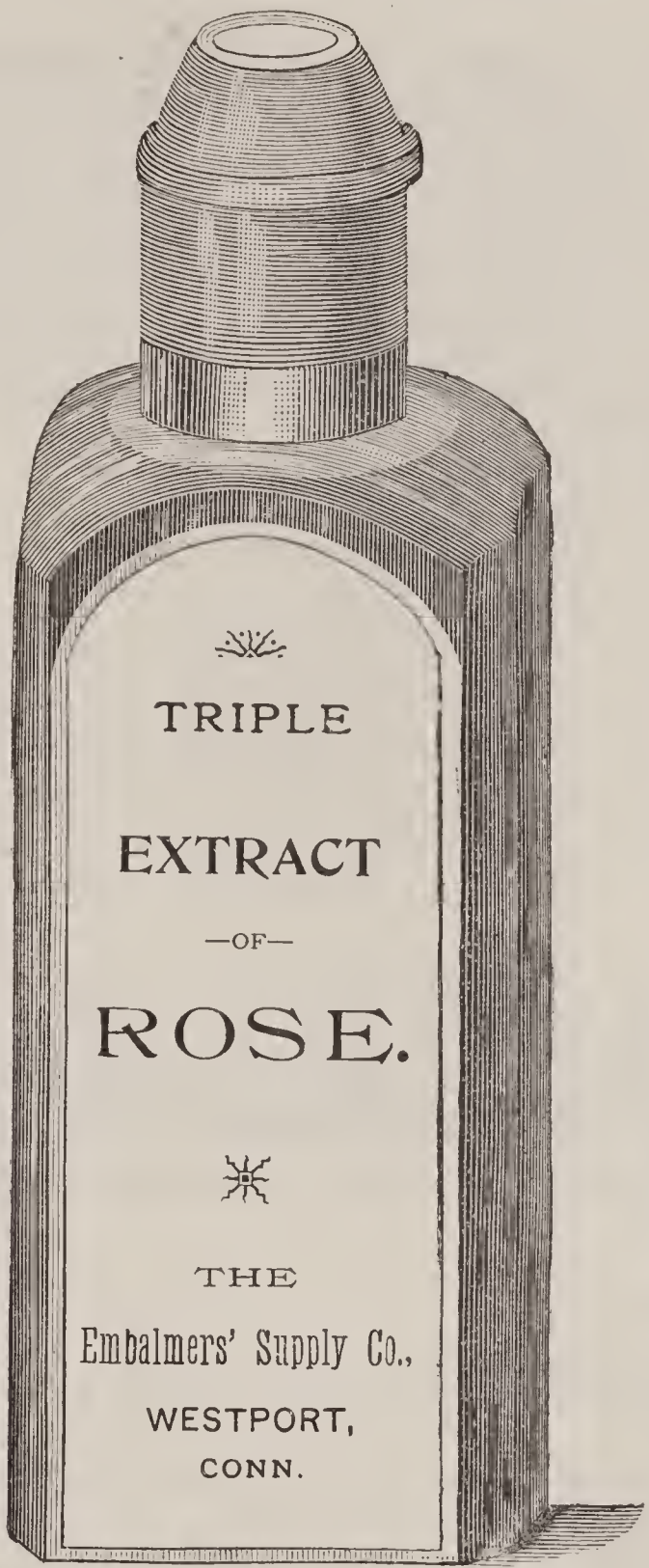
No. 113.

No. 113. Vita Mystica is not a common paint, but an unctuous salve which is spread lightly over the parts by means of a cotton wad; only a very small quantity at a time should be used. The changes it produces in the appearance of the remains are truly astonishing. It has found favor with, and is extensively used by the leading undertakers in the country.

Three Tints: White, Flesh and Carmine. Price, per bottle.....50 cents.

PERFUMERY.

No. 156—	Triple Extract of Rose.
No. 157—	“ “ White Rose.
No. 158—	“ “ New Mown Hay.
No. 159—	“ “ Reseda.
No. 160—	“ “ Bouquet.



Price, 4 oz. bottle, each.....\$1 00
Price, 4 oz. bottle, with Bulb and Atomizer..... 1 50

Comparison with other extracts in the American market will prove that these extracts are the best, both for their lastingness and delicacy of odor.

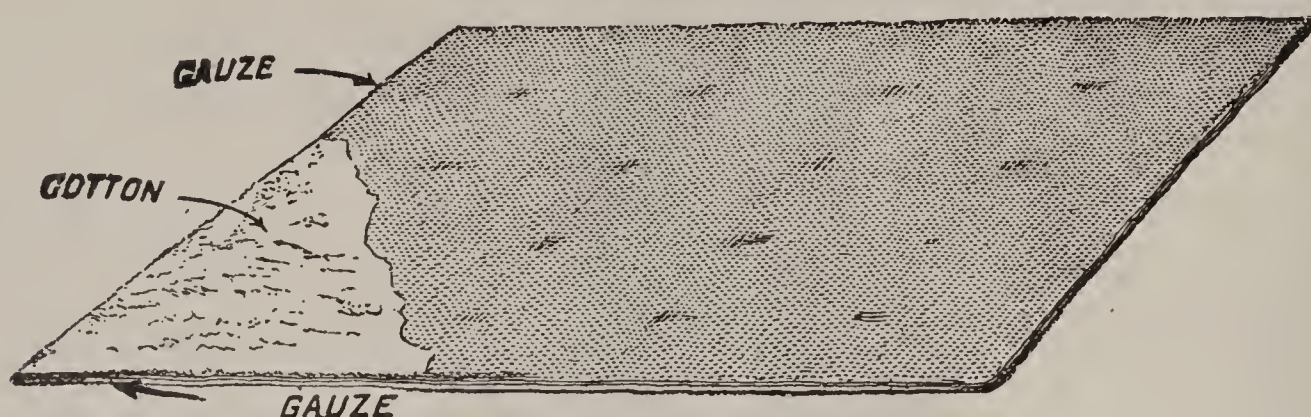
As a rule all death chambers should be well ventilated, especially in cases of contagious diseases, and fumigated with some good disinfectant.

In cases where death has not been due to an infectious or contagious disease, and a powerful disinfectant (like our “*Antidotina*” or “*Disinfecting Cones*”) is not necessary, for purifying the atmosphere of the death-room, we would advise the spraying of some delicate perfumery, to relieve the deathly smell which pervades the air.

In accordance with this idea, we have selected the best grades of French triple extracts of an extremely delicate odor, which, through our European connections, we are enabled to offer to the profession at wholesale prices. These extracts are obtained from cultivated flowers in Southern France by a peculiar mode of abstraction.

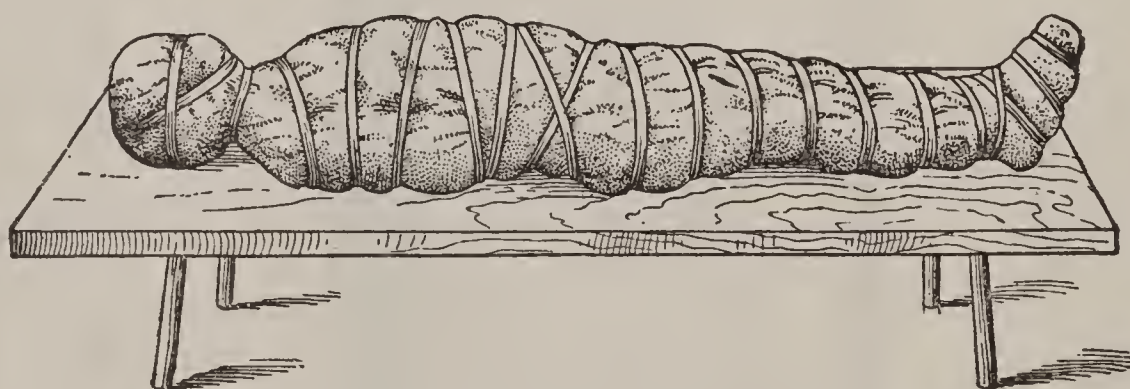
It is our intention to keep in stock a greater variety, but at present we are able to supply the trade with the above extracts only :

THE ANTISEPTIC BLANKET.



IS MADE OF THIN COTTON AND GAUZE.

The prepared cotton *absorbs* and *disinfects* all discharges or emanations. The discharges or diseased germs are received in the blanket and *instantly destroyed*—so much so that *the body of a loathsome smallpox corpse, when wrapped in this blanket, is perfectly safe to handle.* This blanket is a *great protection* against jarring, etc., in transportation. *In disinterring bodies, no matter in what stage of decomposition, they may at once be transferred into this blanket, and all odors, offensiveness and danger in handling is removed.* Keep the blanket just moist (not wet) and its disinfecting action is kept up continually without being re-wetted. We ship the blanket moist *ready for use.*



This Blanket is Indorsed by the State Board of Health of Pennsylvania

BY THE FOLLOWING RESOLUTION.

“That this Board approves and recommends the antiseptic blanket for bodies of those who have died of contagious diseases, proposed by the Secretary (Dr. Benj. Lee) as a substitute for the sheet soaked in corrosive sublimate solution, heretofore required by the Board.”

The necessity to have, at least, one or two of these blankets on hand, must be obvious to every undertaker; *it is a duty to themselves, their family and the public, to protect themselves by means of this blanket.*

No. 166. PRICE PER BLANKET (COTTON GAUZE,) - - - - \$3.00

To secure the blanket to the body, white tape or safety-pins should be used as shown in illustration above.

WE ARE THE SOLE AGENTS FOR THIS BLANKET.

CHEMICALS.



As we use and manufacture large quantities of chemicals for the compounding of our many preparations, we have been enabled to obtain special rates from domestic and foreign producers ; and at the same time our stock needing a continuous supply, our goods are of the freshest and very best qualities.

These unequalled advantages we now offer to all undertakers, who are desirous of compounding embalming fluids or other preparations, according to some special formula of their own.

Prices given below are subject to change according to the fluctuation of market prices :

No. 174.	Acid arsenious, lump, per lb.....	\$0 12
No. 175.	“ “ powder, “	8
No. 176.	“ benzoic, per lb	95
No. 177.	“ boric or boracic crystals, per lb.....	25
No. 178.	“ salicylic, pure, per lb	1 50
No. 179.	“ sulphurous, specific gravity 1.035, per lb.....	15
No. 180.	“ “ “ “ “ in carboys.....	7
No. 181.	“ carbolic, white crystals, per lb.....	30
No. 182.	Aluminium sulphate, white, nearly free of iron, per lb	6
No. 183.	“ chloride solution, specific gravity 1.130, per lb....	5
No. 184.	Alum, lump, per lb....	4
No. 185.	“ “ purified, per lb.....	6
No. 186.	Chloral hydrate crystals, per lb	1 50
No. 187.	Chlorine water saturated, one-half gallon bottles, per lb. . .	10
No. 188.	Calcium chloride, nearly C. P., per lb	40
No. 189.	Labarraque solution, one-half gallon bottles, per lb	6
No. 190.	Glycerine, concentrated, white, in 50 lb. cans, per lb.....	22
No. 191.	Potassa nitrate (Saltpetre), per lb.....	12
No. 192.	Mercury bichloride, per lb	1 00
No. 193.	Soda arseniate, white, 25 lbs. or larger packages, per lb.....	20
No. 194.	Soda sulphite, 25 lb. packages, per lb.....	13
No. 195.	Soda hyposulphite, 25 lb. packages, per lb....	6
No. 196.	Soda bisulphite, per lb.....	35
No. 197.	“ “ 25 lb. packages (jar), per lb	30
No. 198.	“ “ solution, per gallon.....	80
No. 199.	Zinc chloride solution, 50 per cent., in half gallon bottles, per lb. .	12
No. 200.	“ “ “ “ in 5 or 10 gallon kegs, per lb.....	10
No. 201.	“ sulphate crystals, purified, in 25 lbs. or larger packages, per lb..	7

Boxes or bottles will be charged at cost, and if bottles are returned, freight prepaid will be credited.

"ANTIDOTE" AGAINST ARSENICAL POISONING.



Arsenical poisoning by Embalming fluids containing arsenious acids have occurred often within the last few years, which fact makes it advisable for the Embalmer to keep on hand, and ready for immediate use, an antidote for arsenious poisons. We have therefore selected the best formula known, which consists of two different liquids put up in separate bottles. Directions accompany each bottle.

No. 263. Price..... 75 cents.



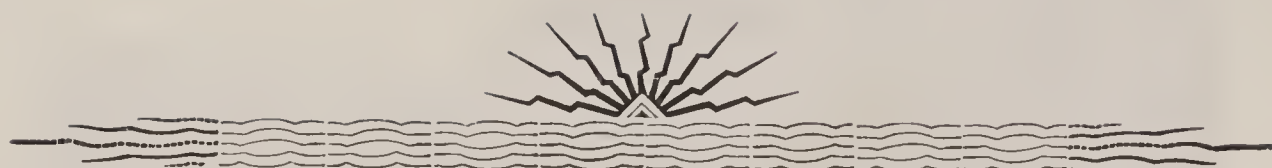
CARE OF INSTRUMENTS.



Metal instruments should always be kept in a dry place to prevent them from rusting, when not in use. After they have been employed, it is a good plan to cleanse them by an immersion in hot water. This will not only prevent the embalming fluid from attacking the metal, but it will also act as a preventive against carrying germs of contagion or infection in them. After drying them off with a clean cloth, or chamois, rub them with tallow, and allow a thin coating of the grease to remain on the metal portion of the instrument. Instruments served in this manner will always look bright and be in a presentable condition.

Rubber instruments should be kept in a cool, dry and dark place, as heat will injure them. After using they should be cleaned with *cold* water and dried before putting away. Rubber tubing should be thoroughly cleaned by placing it in cold water (running if possible) and then hung up so the water will run out. When dry it can be placed in cabinet without injury to the instruments. Hard rubber instruments break easily, consequently more care should be taken in handling them than with metal instruments.

The washers on the plunger of the Atmospheric Pump should be kept in a pliable condition, by pouring a few drops of Neatsfoot oil on them. Two or three drops of oil at a time placed in the barrel of the pump will keep it in good condition. The valves, if metal, as well as the valve seats, should always be kept clean. If the valves are made of rubber, no oil should come in contact with them. We repair our pumps, *free of charge*, unless parts have been carelessly broken.



“UTOPIA”

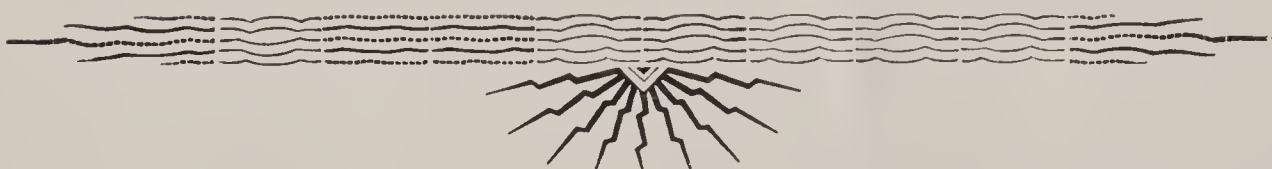
CASES

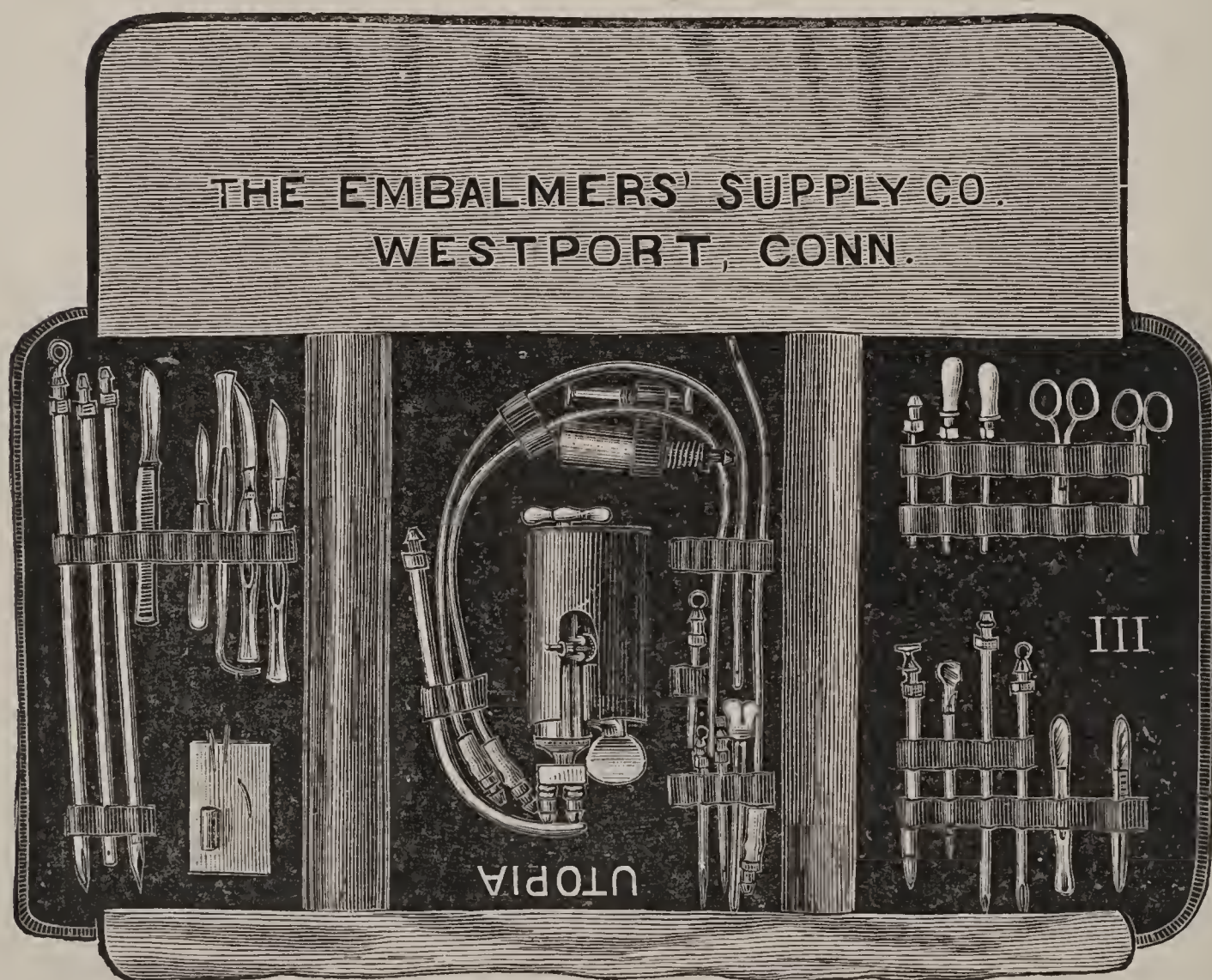
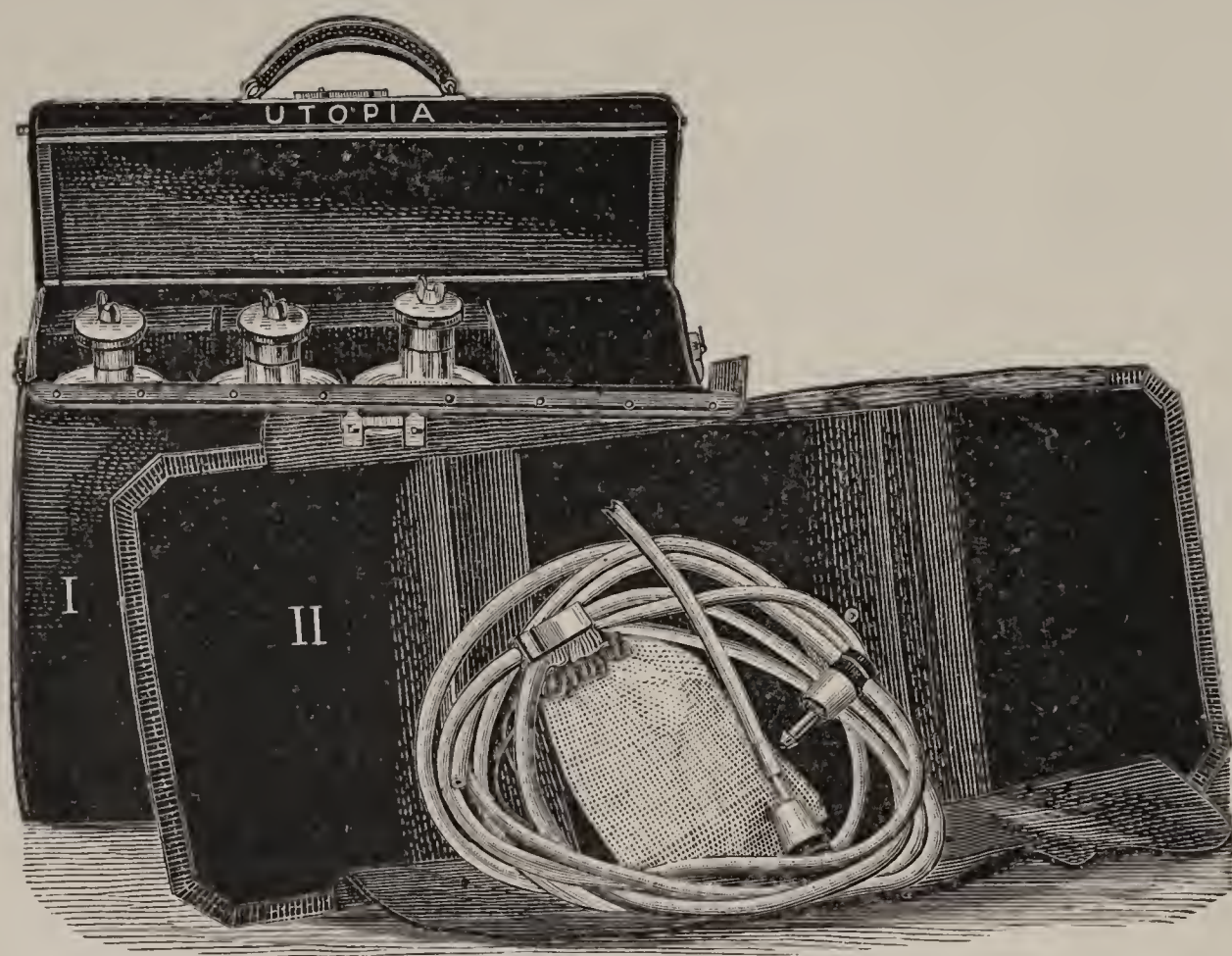


AND



CABINETS.





No. 149. The Pearce Satchel, shown above, is the \$70.00 outfit.

For further prices, see page 35.

The construction and interior arrangement of this practical embalmers' outfit was suggested by **Mr. Josiah S. Pearce**, the well and favorably known F. D. of Ardmore, Pa.

The satchel is designed to hold three half gallon bottles standing upright, with a large folding fleece-lined tray for instruments, which fits on one side of the bottles, and another rubber-lined tray for tubing, sponge, or other moist articles on the other side; a space in one corner of the satchel being reserved for sundry articles.

PLEASE ORDER BY NUMBER.

No. 145. The Pearce Satchel , with 3 one-half gallon bottles and stopples, no instruments.....	\$18 00
No. 146. The Pearce Satchel , same as above, besides the following: Alpha Syringe, Embalming Needle, Scalpel, Aneurism Needle, Forcep, Scissors, two Nozzles, three Surgeon Needles, H. R. Nasal Tube, Catheter, Spool Silk, Sponge, Soft Thimble.....	25 00
No. 147. The Pearce Satchel , same as No. 146, besides Atmospheric Pump, Goose-neck and Tubing (instead of Alpha Syringe), besides the following: Cavity Needle, Renouard Needle, Director, Bistouri, Cardiac Needle, Hypodermic Needle.....	40 00
No. 148. The Pearce Satchel , same as No. 147, besides two Silk Flexible Tubes, Infant Trocar, Artery Washer, 6-inch Renouard Needle, Suction Leecher, Utopine and Atomizer, Kauterion.....	50 00
No. 149. The Pearce Satchel , same as No. 148 (antiseptic and Aluminum instruments), besides Extra Goose-neck and Tubing, Pump-holder, two antiseptic Scalpels, large and small, Eye Forceps, Curved Scissors, 1 Renouard Nozzle with rod, 1 E. S. Co. Chin Supporter, Pocket Trocar, Tube Holder, Derma, Sponge Bag, Box Salve, Soap Book, Adhesive Plaster, 2 Disinfecting Cones, 2 Boxes Lozenges, Vita Mystica, Silver Plating, Roll Cotton Bandage.....	70 00
No. 150. The Pearce Satchel , same as No. 149, besides 1 pair P. G. Surgeon Gauntlets, 1 dozen Eye Caps, Ivory Scalpel, Ivory Aneurism Needle, Ivory Arterial Hook, 4 Renouard Nozzles with rod, 15-inch Renouard Needle, 15-inch Embalming Needle, Set Gem Chin Supporters, Dolge Automatic Injector, bottle Perfumery and Atomizer, Needle Holder with catch, Cross-action Forceps, small Nasal Tube, Catling Knife, 2 long Aluminum Arterial Nozzles.....	100 00
No. 151. Satchel without Trays and Bottles.....	9 00
No. 152. Instrument Tray only	5 00
No. 153. Tray for Sponges and Tubing only.....	3 00

R. R. Bringhurst, the well-known F. D. of Philadelphia, Pa., writes us the following without any solicitation:

June 5, 1893.

"I have examined your 'PEARCE SATCHEL' very carefully and find it complete in all its appointments. I think it is something the Trade has stood in need of for some time. It is only another evidence that you are anxious to accommodate the Funeral Directors with such paraphernalia as every well-equipped establishment should contain, and by placing in their hands the tools which properly directed by an educated brain will lift our calling from a business to a profession. I trust that your honest efforts will meet with the reward that they deserve."

See next page for Mr. J. S. Pearce's comments on this satchel.

READ MR. PEARCE'S COMMENTS ON THE SATCHEL.

ARDMORE, PA., March 9, 1893.

EMBALMERS' SUPPLY CO., Westport, Conn.

Gentlemen:—The satchel reached me by express this morning and is, by all odds, the most complete Embalmers' Outfit that I have ever seen. I do not believe that there is anything in the market that can equal it as regards its "completeness," and cannot conceive an improvement in either its construction or appearance.

It is the first article of its kind that I have seen, which is of sufficient carrying capacity to meet all the varied requirements of the practitioner in a proper performance of his duties as an embalmer, and must supplant all the small and insufficient outfits heretofore in use by our people.

The increased size and weight of the package is more than compensated for in the addition of the extra bottle, which is so frequently a necessity when removing blood or other fluid from the body.

The fact that you have constructed a satchel which gives to the embalmer the use on all occasions of a full gallon of fluid, with the use of an additional bottle, for other purposes, should alone be a sufficient recommendation to insure to you the sale of one of these improved appliances to every Funeral Director in America.

It is well known that a large portion of the failures in the experience of all of us, is attributable to the fact that an insufficient quantity of fluid was trusted or rather expected to do the work which required and commanded an increased amount of the preservative. This is particularly the case in the "cavity work" practiced by so many embalmers at this time. The complete and perfect preservation of an adult human body, in warm weather, by the use of a very small quantity of any fluid, no matter of what make or how highly recommended by graduates of one-day embalming schools, is such a monstrous and dangerous mis-statement that it requires only a moment's careful thought to convince any person having the slightest knowledge of the human body or of its tendency to rapid decomposition, of its fallacy. The carrying of the bottles in a standing position must present itself as a decided improvement over the satchels heretofore used in which the loose fitting or insecurely fastened corks work the destruction of the package, injury to the instruments and loss of the contents of the bottles.

In regard to the instruments composing the contents of the satchel, I have only to say that in my judgment, everything required, in the practice of the embalmer of this day, is contained in this outfit. In other words, all that an embalmer requires, in addition to your new outfit, is a knowledge of the science of embalming, as taught in the U. S. College of Embalming, to insure his success in the performance of the most important branch of the business in which he is engaged.

In regard to your request that I will permit you to use my name in connection with this new creation, I have to say that you have my full and free permission to use my name in any connection where its use will be of advantage to either your firm, the College which you have been instrumental in giving to the world, or to the people composing the calling of which I have been a life-long member. If my suggestion in reference to the construction of this outfit was of any worth to you, I am indeed proud to think that I have been of as much worth to the profession in making the suggestions, as to your firm in assisting in the production of an article that should have a ready sale and supply a want that has presented itself to myself as well as to many others of my acquaintances who are engaged in the business of embalming and funeral directing.

I thank you for the honor conferred, and stand ready at all times and in all places to proclaim the merits of "The Pearce Satchel."

Wishing you the greatest success in your efforts to increase the efficiency of the work we are daily doing, by giving to us the very best productions of brain as well as factory, with which to do that work, I am, as ever,

Very sincerely yours, JOSIAH S. PEARCE.

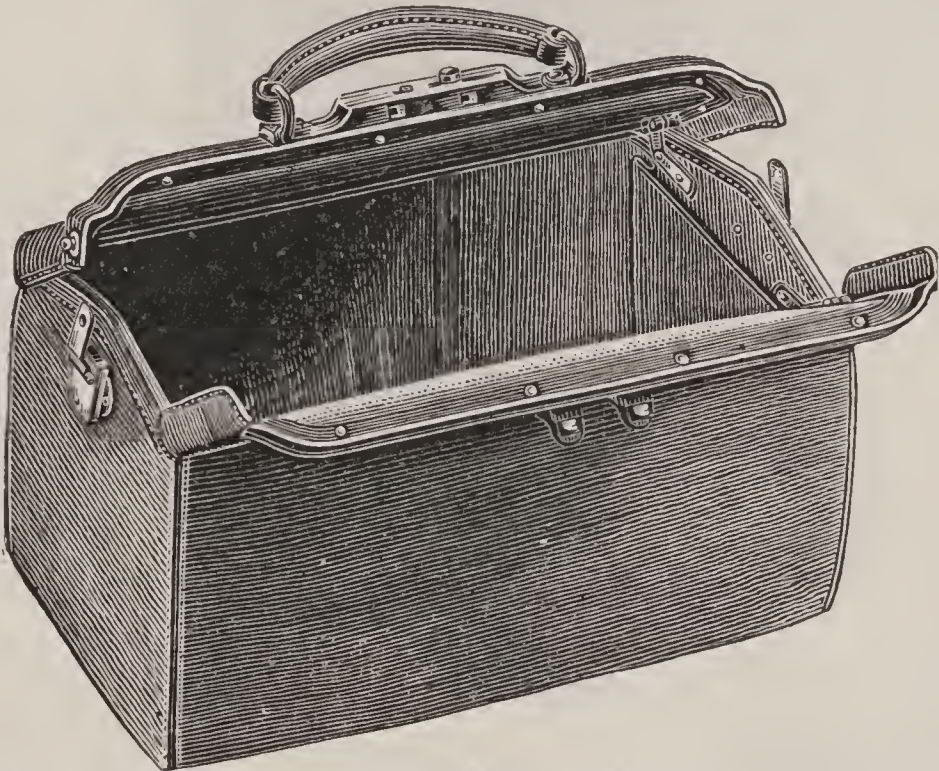
THE PROFESSIONAL WALLET.

 PLEASE ORDER BY NUMBER.

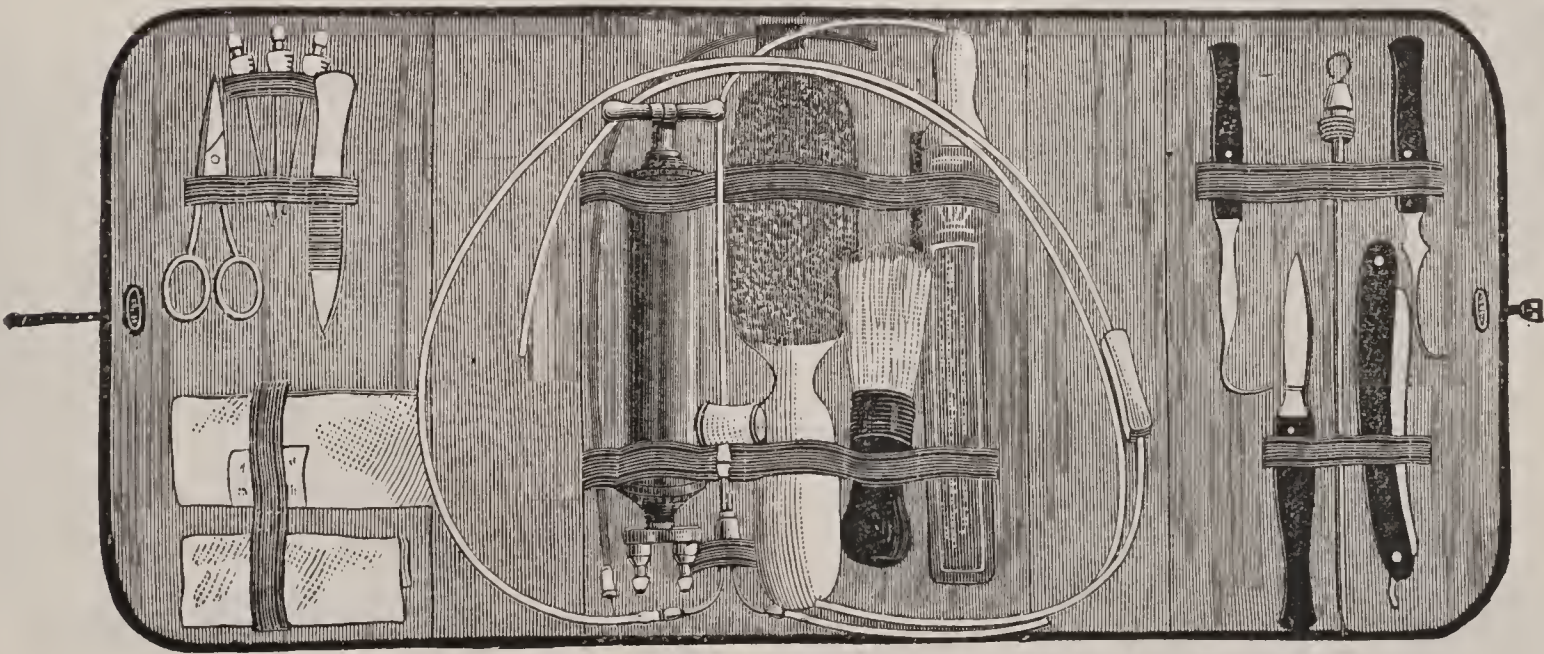
No. 1. The Professional or Embalmers' Wallet is made of best quality of leather, with polished steel mountings and clasps, and provided with a Yale safety lock. The folding tray containing the instruments is made of black leather; and all parts of the Wallet are substantially and neatly sewed together. It holds three one-quart or two half-gallon bottles, and contains the following instruments : Embalming needle, bulb syringe, three arterial nozzles, scalpel, aneurism needle, arterial hook, forceps, scissors, catheter, three surgeons' needles, silk, chain and hooks, six artery binders, bottles with patent stoppers, razor, razor-strop, comb, sponge, shaving-cup, hair-brush, shaving-brush, three feet tubing\$20 00

No. 1a. The Professional or Embalmers' Wallet, with instruments as above, and atmospheric pump with goose neck and tubing 30 00

No. 11. The Professional or Embalmers' Wallet, with either three one-quart or two half-gallon bottles, with patent stoppers and tray for instruments, no instruments, etc..... 12 00



PROFESSIONAL, OR EMBALMERS' WALLET.



TRAY FOR No. 1a.

No. 264. Instrument Tray, only, no instruments\$3 50

CABINETS.

They are made of black walnut, highly finished ; with nickel-plated corners and handle ; neatly jointed and of the best workmanship.

No. 2. Cabinet—with three one-quart bottles, with the same instruments as in No. 1\$15.00

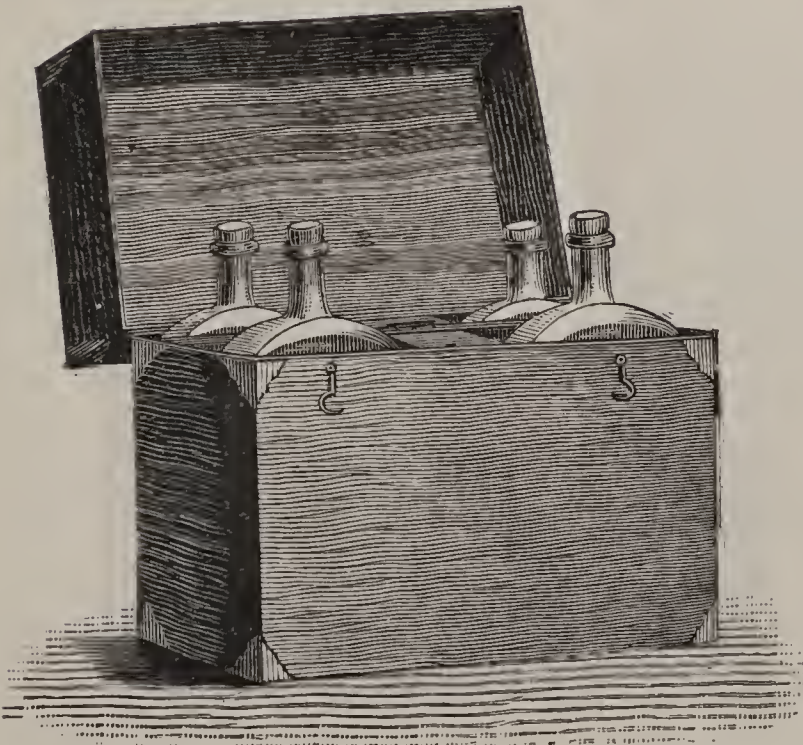
No. 3. Cabinet—with four one-quart bottles, with same instruments as in No. 1 16.00

No. 12. Cabinet for four one-quart bottles, no instruments, etc..... 7.00

No. 13. Cabinet for three one-quart bottles, no instruments, etc 6.00



No. 2. CABINET COMPLETE.

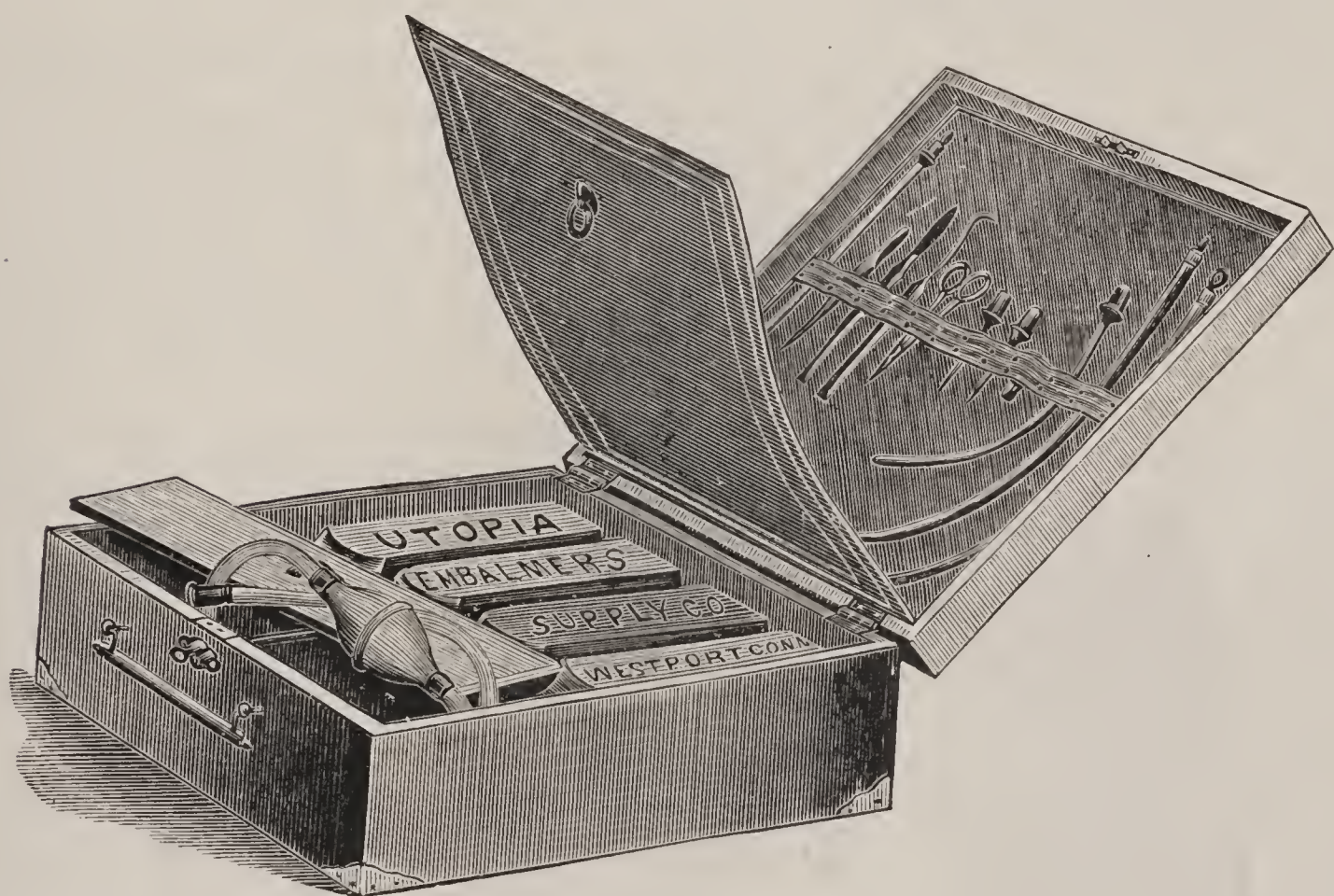


No. 3. CABINET.



TRAY FOR No. 3 CABINET.

THE UTOPIA FOLDING CABINET.



No. 154. Containing the following Instruments:—One English catheter, three hard rubber arterial nozzles, one open and one closed thimble, one rubber embalming needle, one metal embalming needle, one nasal tube, hard rubber, one bulb syringe, four one-quart bottles, four rubber stoppers, one gallon Knowles' cavity fluid. Price, complete.....\$11 00

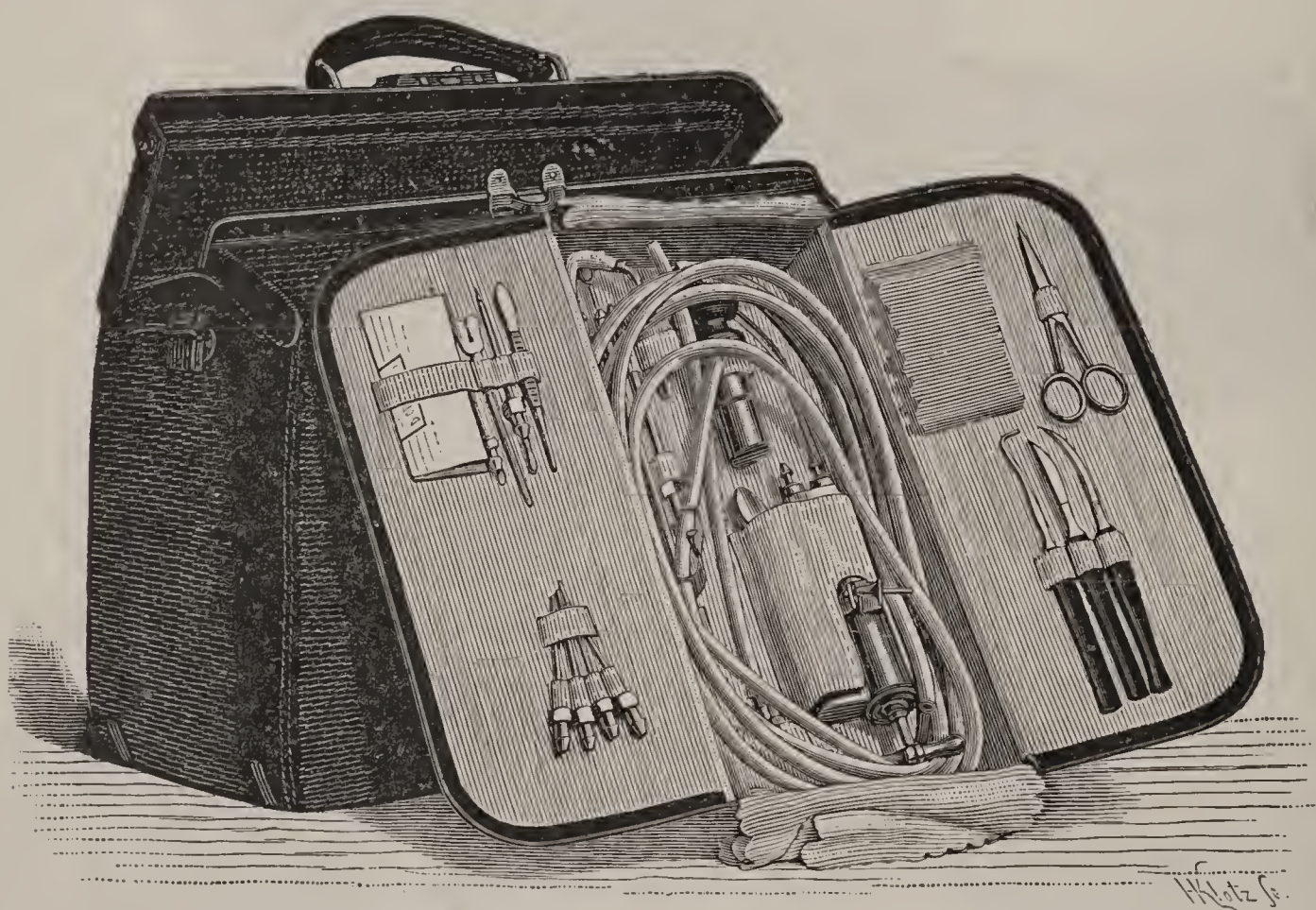
No. 155. Contains the following:—One hard rubber nasal tube, four hard rubber nozzles, one open and one closed end thimble, one metal embalming needle, one hard rubber embalming needle, one aneurism needle, one scalpel, one forcep, one pair scissors, one catheter, one bulb syringe, one set surgeons' needles, four one-quart bottles, square, four rubber stoppers, one gallon Knowles' cavity or Utopia fluid. Price, complete.....\$14 00

These cases are made of black walnut, and are highly polished; they have a large plain drop handle, and a Yale lock, and are able to hold more instruments than enumerated above.

THE "GRADUATE."

No. 136 is in every way similar to the Professional, in material, shape and quality. It is intended as an outfit for those who have graduated in the United States College of Embalming, and contains all the instruments and special attachments used in the College in the embalming of bodies. Size of "Graduate" about one-third larger than "Professional." The tray for the instruments is lined inside with fine chamois, and the contents are as follows :

Atmospheric pump, two goose necks with tubing, leecher, cavity needle, Renouard needle, embalming needle, artery washer, nasal tube, catheter, four arterial nozzles, hypodermic needle, infant trocar, director, scissors, bistouri, scalpel, aneurism needle, three surgeon's needles, one dozen artery binders, pump holder, sponge bag, sponge, one pair forceps, tube holder, soap book, roll adhesive plaster, two spools of silk, box salve, two half-gallon graduated bottles with patent stoppers, one bottle derma, one bottle Utopine with atomizer. Price, complete.....\$50 00



No. 136. "GRADUATE" SATCHEL, COMPLETE.

No. 135. The "Graduate" without instruments, but with tray and bottles\$15 00

No. 4. Atmospheric Pump Case, containing atmospheric pump, with goose neck and tubing, cavity needle, two arterial nozzles, scalpel, aneurism needle, scissors, forceps and six artery binders 14 00

No. 4a. Atmospheric Pump, hard rubber, in case, with the following instruments : Rubber goose neck and tubing, one cavity needle, scissors, scalpel, forceps, aneurism needle, three nozzles, six artery binders..... 11 00

No. 4b. Atmospheric Pump, hard rubber, with rubber goose neck and tubing, in case, no instruments 6 00

No. 4c. Atmospheric Pump, hard rubber, with goose neck and tubing, no case..... \$5 00

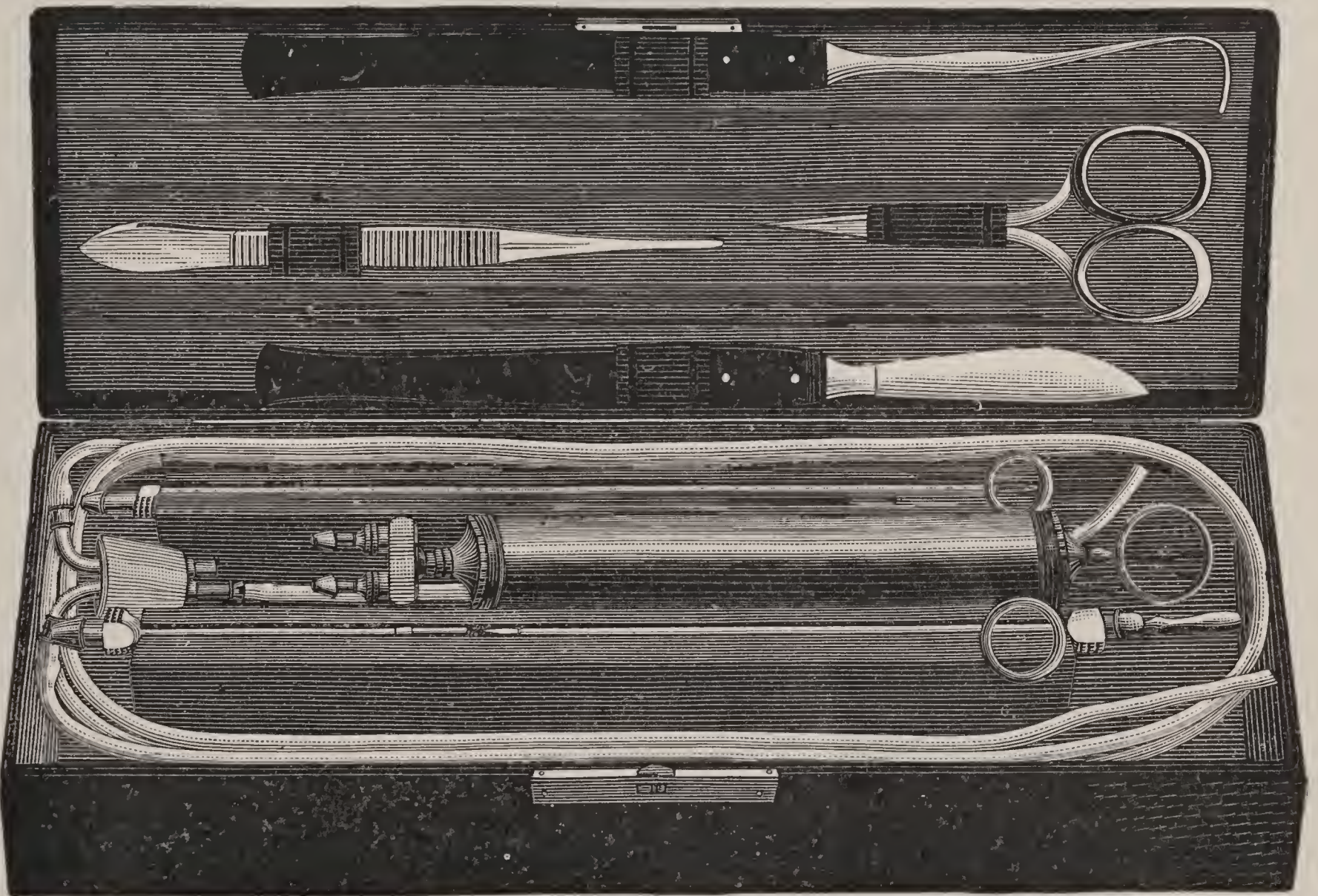
This pump is in every respect similar to the metallic one, working in the same manner, the only difference being in the material of which the pump is made.

No. 5. Rubber Force Pump, in case, containing embalming needle, three nozzles, one nasal tube, one catheter, one open, one closed end thimble, one scalpel, one aneurism needle, one scissors, one forceps, one arterial hook, six artery binders, \$10.00

This is the ordinary single action pump, simply drawing the fluid from any vessel and forcing it out by the down stroke of the plunger. It is so well-known that it scarcely needs any further description.

No. 63. The same, without instrument.....\$5 00

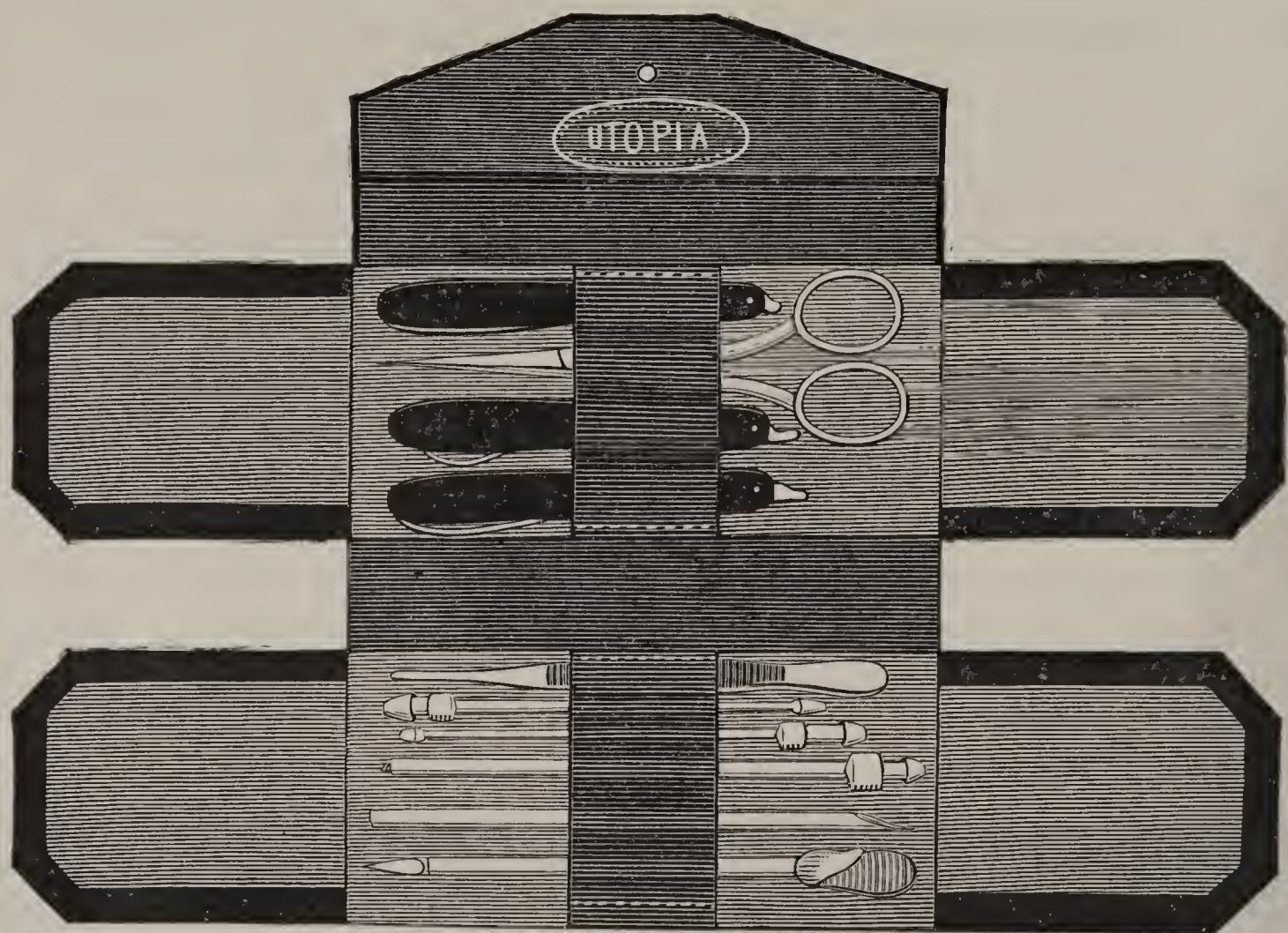
We cannot recommend this pump for durability or perfect work for any length of time, as the plunger and the valves become impaired in their action by the desiccative properties of the fluid, with which they are in contact whilst the pump is being used; moreover the material (hard rubber) of which the pump is composed, is very brittle, and unless very carefully handled some of the parts may be easily broken.



No. 6.

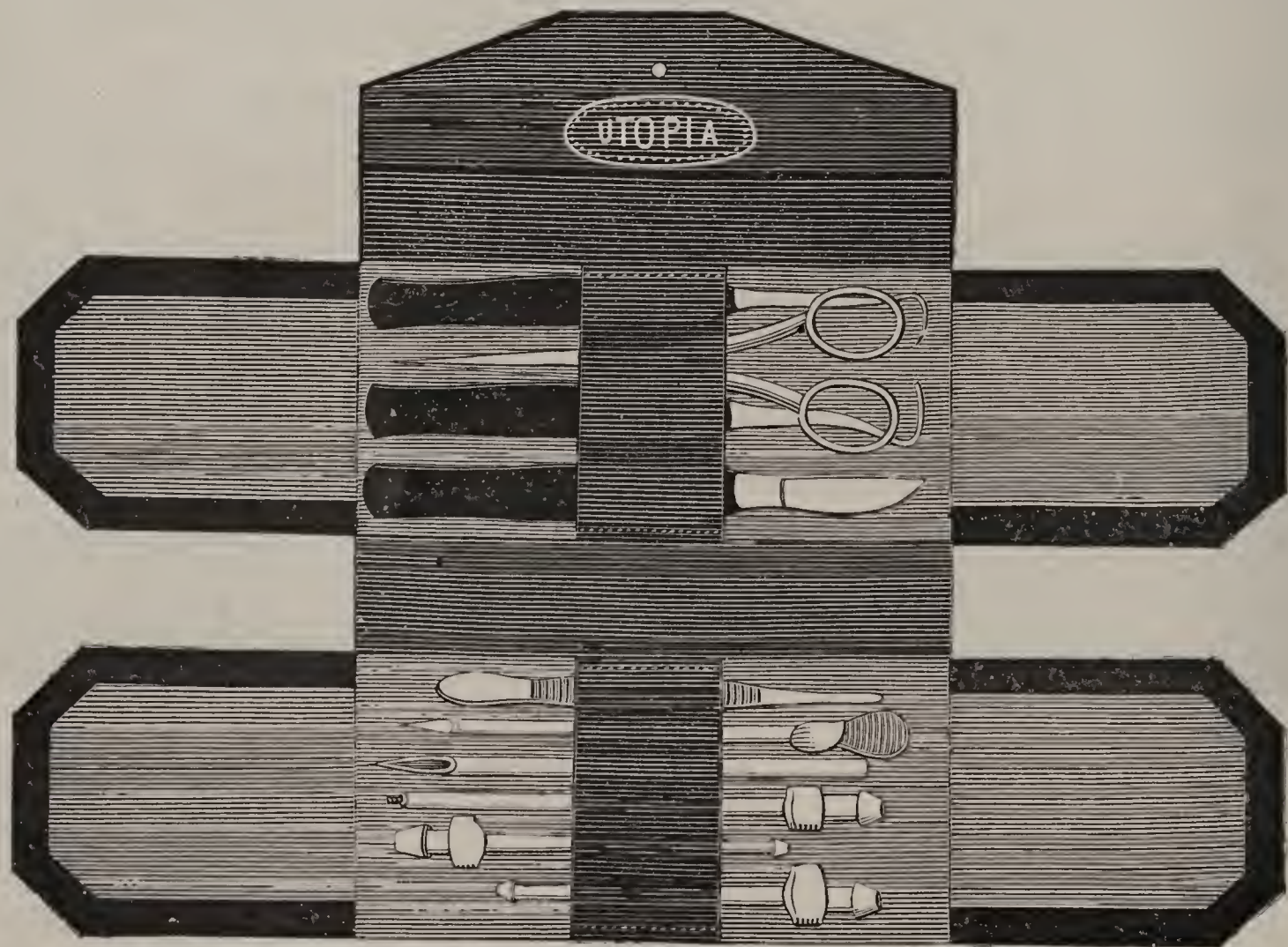
No. 6. Infant Atmospheric Pump, with Goose-neck and Tubing, in case, with one small embalming needle, one infant trocar, one scalpel, forceps, scissors, aneurism needle, one small nozzle\$11 00

A small metallic pump in a neat shagreen case, and provided with small instruments suitable for the treatment of infantile bodies. The pump is an atmospheric pump, working on the same principle as the larger one.



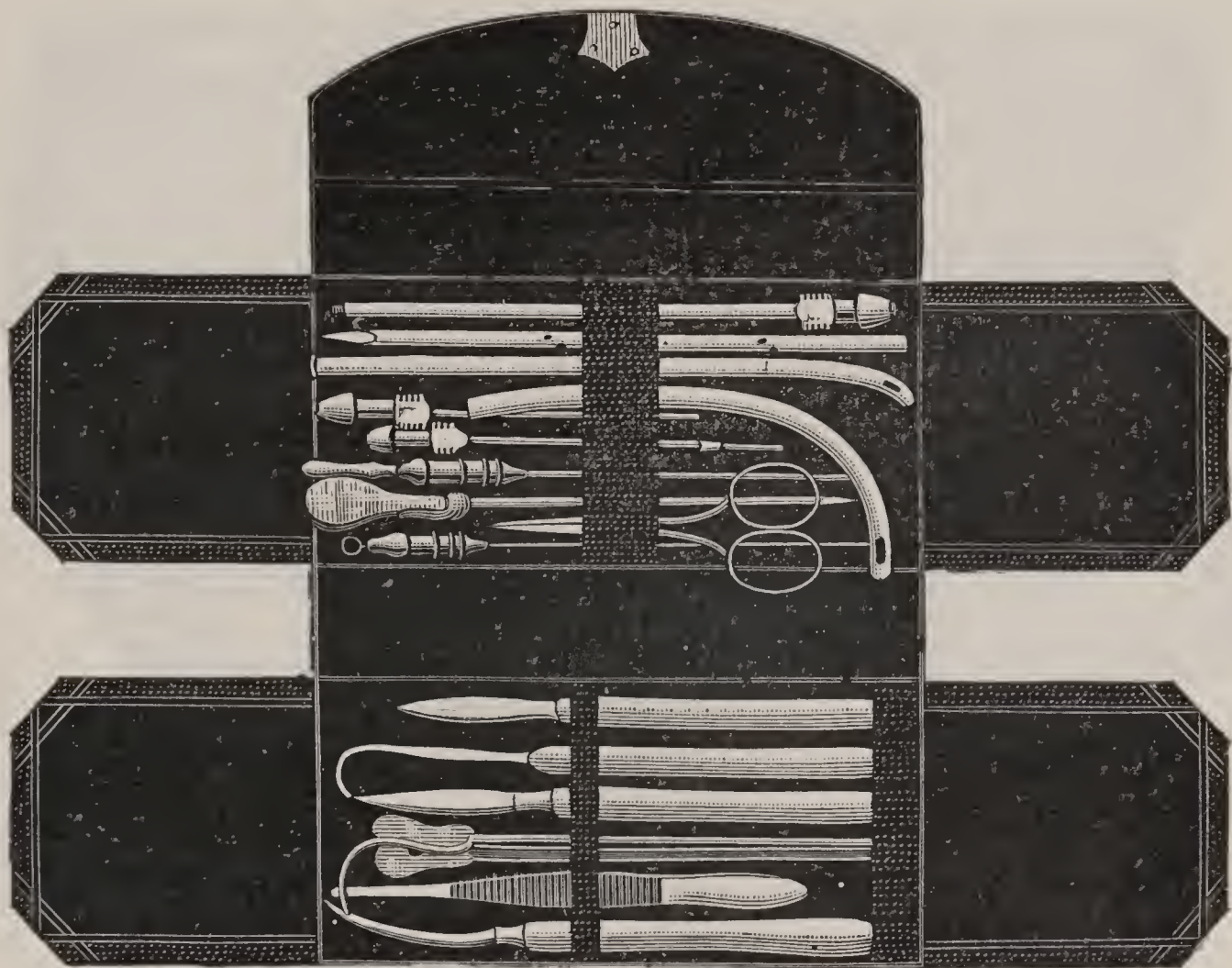
No. 7.

No. 7. Pocket Case with folding instruments, one embalming needle, two nozzles, one forceps, one trocar, one scissors, one scalpel, one aneurism needle, arterial hook \$8 50
A neat morocco case, satin lined and containing many of the necessary attachments.



No. 8.

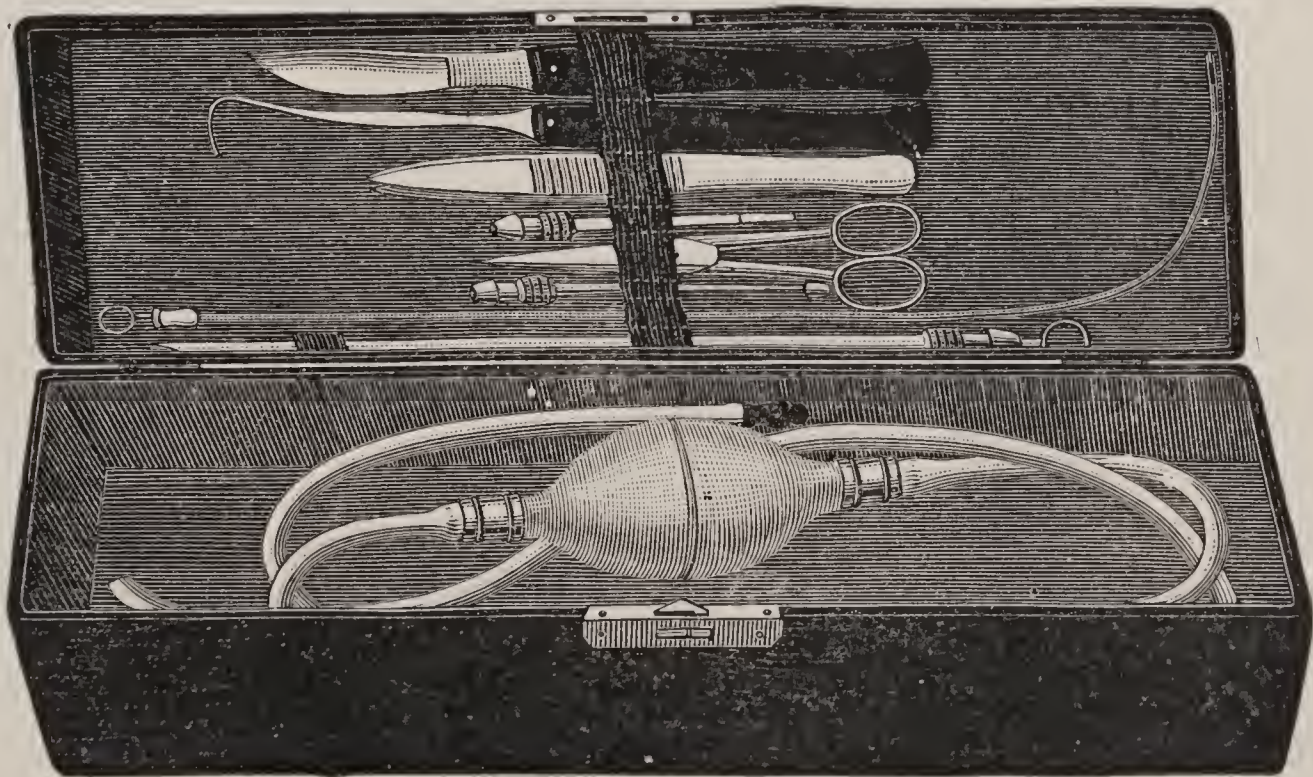
No. 8. Pocket Case filled as above, but no folding instruments \$7 50



No. 8a.

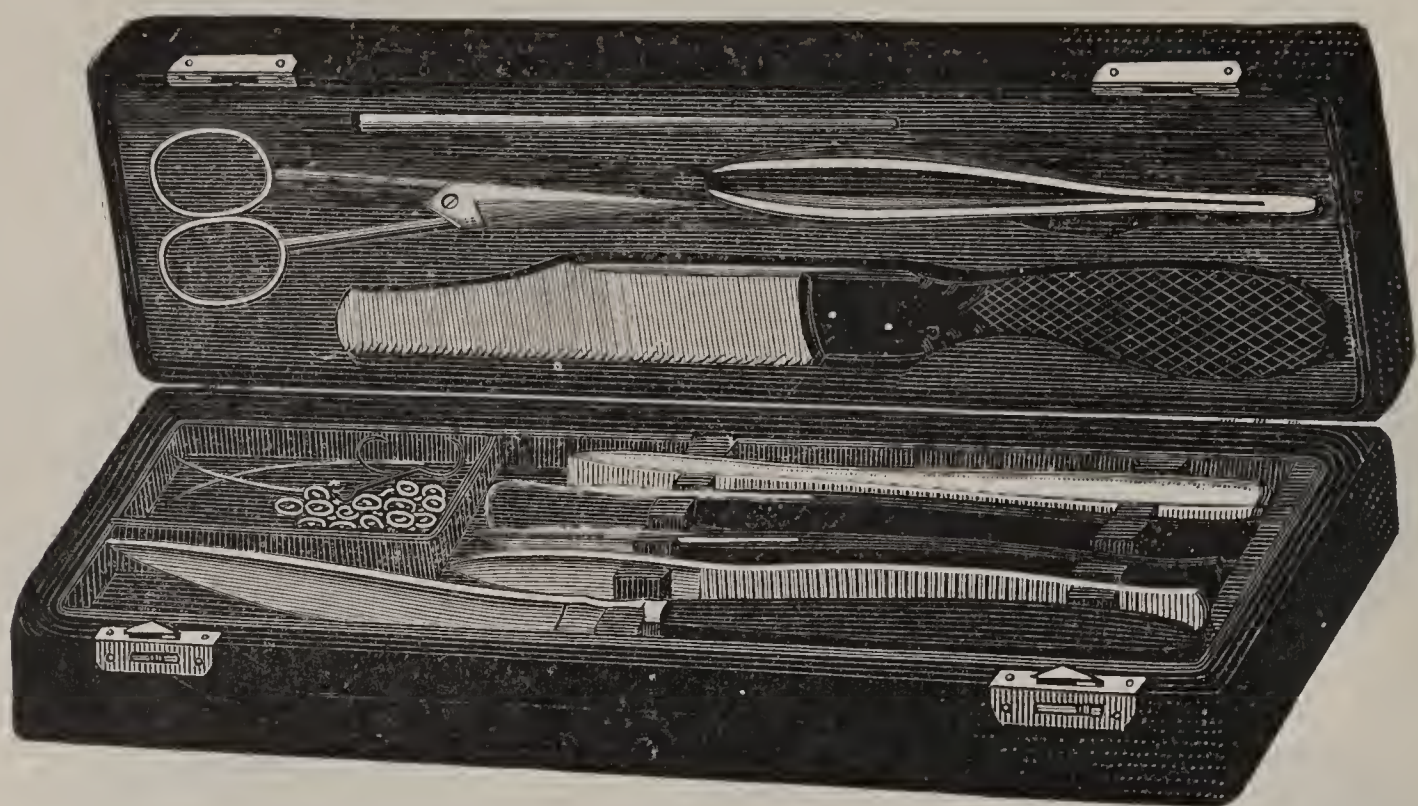
No. 8a. Pocket Case, fine sealskin, folding, containing the following anti-septic instruments: bistouri, scissors, two scalpels, infant trocar, director, nasal tube, Renouard needle, two arterial nozzles, hypodermic needle, aneurism needle\$14 00

This is a beautiful pocket case, expressly made for the use of the students in the United States College of Embalming, and containing all the attachments used in the College.



No. 9.

No. 9. Instrument Case, containing bulb syringe, embalming needle, two arterial nozzles, one scalpel, one aneurism needle, one forceps, one scissors, one catheter \$6 00

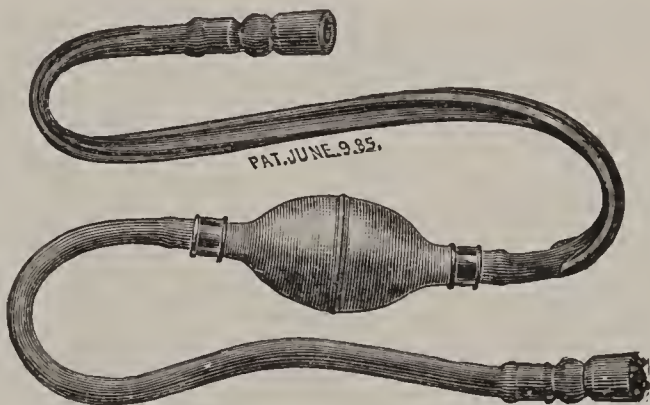


No. 9a.

No. 9a. Post Mortem Case, containing the following instruments:
Cartilage knife, Catlin knife, scalpel, arterial hook, chisel, metecarpel saw, scissors, forceps, blow pipe.....\$12 00

A neat case containing all the instruments necessary for holding an autopsy, opening the skull and examining the brain ; raising the sternum by cutting through the costal cartilages, etc. It is chiefly intended for the use of coroners, or of those undertakers in whose establishments inquests and post mortem examinations are frequently held.

No. 10. Continuous Flow Syringe, with case, containing embalming needle, three nozzles, one catheter, one nasal tube..... \$5 00



No. 65.

A common Bulb Syringe, whose delivery is so contrived as to expand under the pressure of the fluid ; its tendency to contract when filled with fluid producing an even and continuous flow.

No. 65. Continuous Flow Syringe, without instruments..... \$2 00

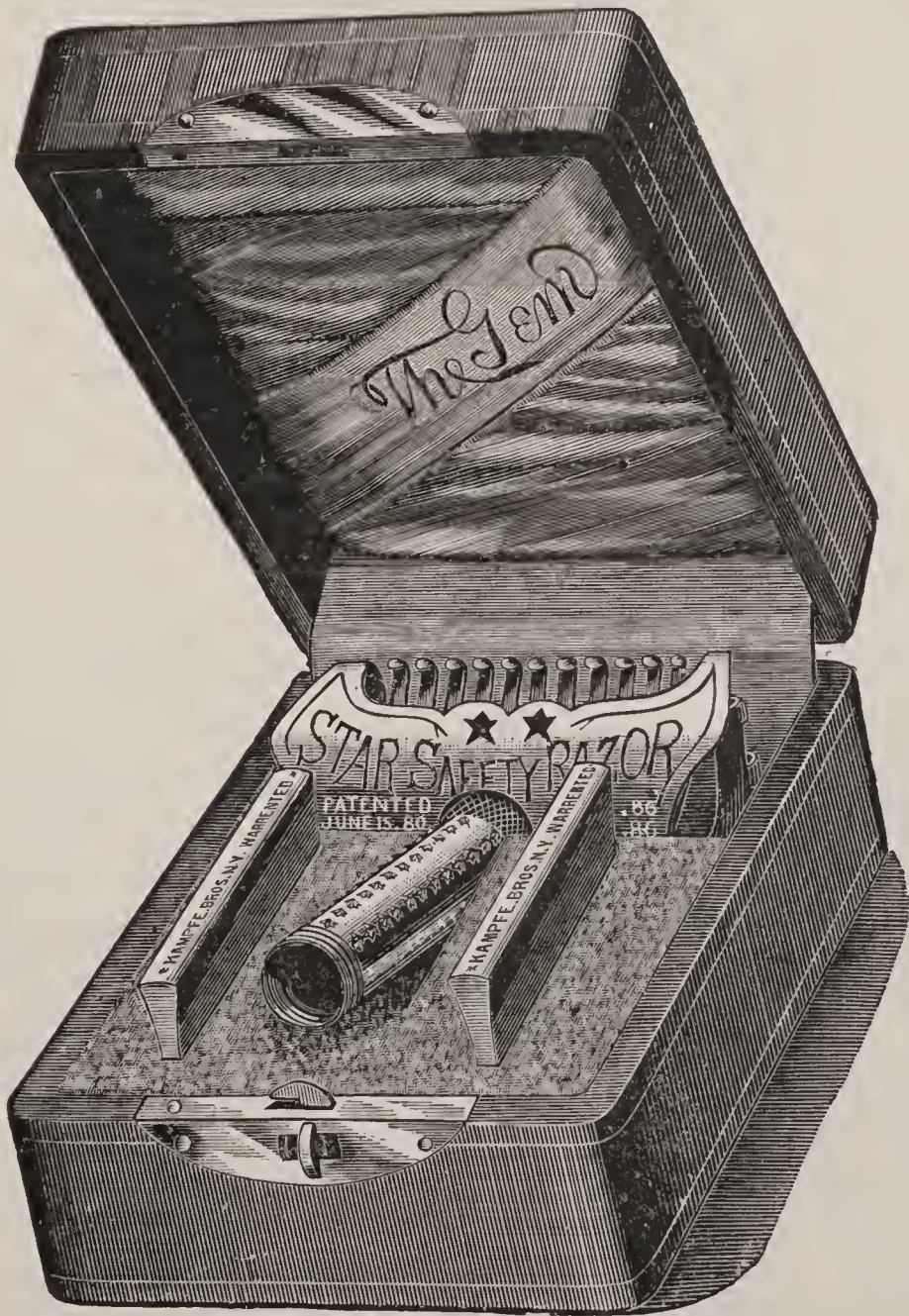
No. 14. The Hypodermic Syringe, with two platina needles. This is a small glass syringe, provided with two very slender platinum needles. It is intended to introduce the fluid under the skin, in those parts which being unprotected by the hair or beard; the puncture made by the ordinary hypodermic needle,

which is much larger and longer, would be easily detected. It is especially adapted for use on the bodies of females and infants. The syringe and needle are put up in a neat morocco case fastened with a spring clasp ... \$2 50



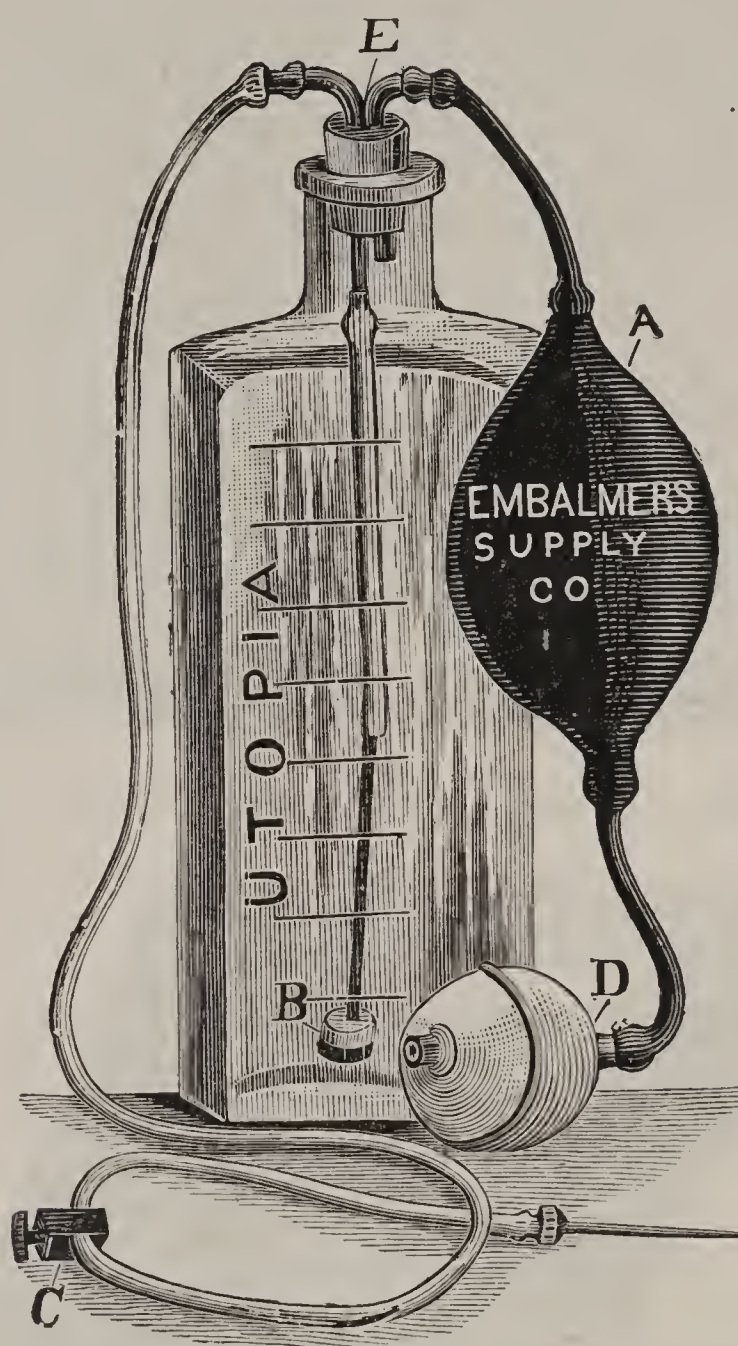
No. 14.

No. 15. Star Razor, the gem case, with two blades \$3 50



No. 15.

No. 161. The Dolge Automatic Injector. This excellent device enables the operator to reduce the time of injecting about one-half. After having set the Injector at work, and the flow of fluid regulated, he can attend to the cavities or other work which needs attention ; or, if actually necessary, the Injector can be left to do its work, while the embalmer attends to another case.



DIRECTIONS.

Place the goose-neck (E) tightly in the bottle, then close the discharge tube by screwing up the cut-off (C), and fill the large black air-chamber (A) by compressing the small bulb (D), until the large bulb reaches a size about 18 inches in circumference (which will empty a half-gallon bottle, or 17 inches in circumference will empty a quart bottle), then connect the discharge tube with either an arterial tube or embalming needle, and after making all arrangements for injecting either in the artery or cavity, as the case may be, open up the discharge tube by unscrewing the cut-off (C) gradually, and the fluid will begin to flow immediately.

The amount of fluid to be injected can be regulated with the air cut-off (B), by simply raising or lowering it in the tube which suspends from the goose-neck. As the fluid escapes through the discharge tube the floating valve follows it until the fluid reaches a level with the bottom of the cut-off, when the valve will immediately check the flow of the fluid.

Price, in neat case, without bottle \$6 00

No. 163. The Undertakers' Necessary. Contains instruments needed by undertakers who do not regularly embalm bodies, but must notwithstanding be prepared to pump gases from and inject fluid in the cavities and remove discoloration at short notice, or exhaust the water of dropsy. To this end we are now presenting to the profession a compact and neat satchel containing the instruments needed to meet emergencies, also give a list of those which will be found useful. The satchel contains the following: 1 Atmospheric pump with Goose-neck and tubing, 1 Hypodermic Needle, 1 Cavity Exhausting Tube, 1 Scalpel, 1 Reversible Trocar, 3 Surgeons' Needles, 1 E. S. Co. Chin Supporter, 1 dozen Cleats, 1 dozen Eye Caps, 1 Spool Surgeons' Silk, 1 bottle Utopine and Atomizer, 1 bottle Derma, 1 Vita Mystica, 1 Soap Book, 1 Sponge and Sponge Bag.



Complete..... \$30 00

No. 140. Hypodermic Bulb for use with Hypodermic Needle in removing discolorations..... 75

No. 21. Renouard needle for removing gases..... 1 50

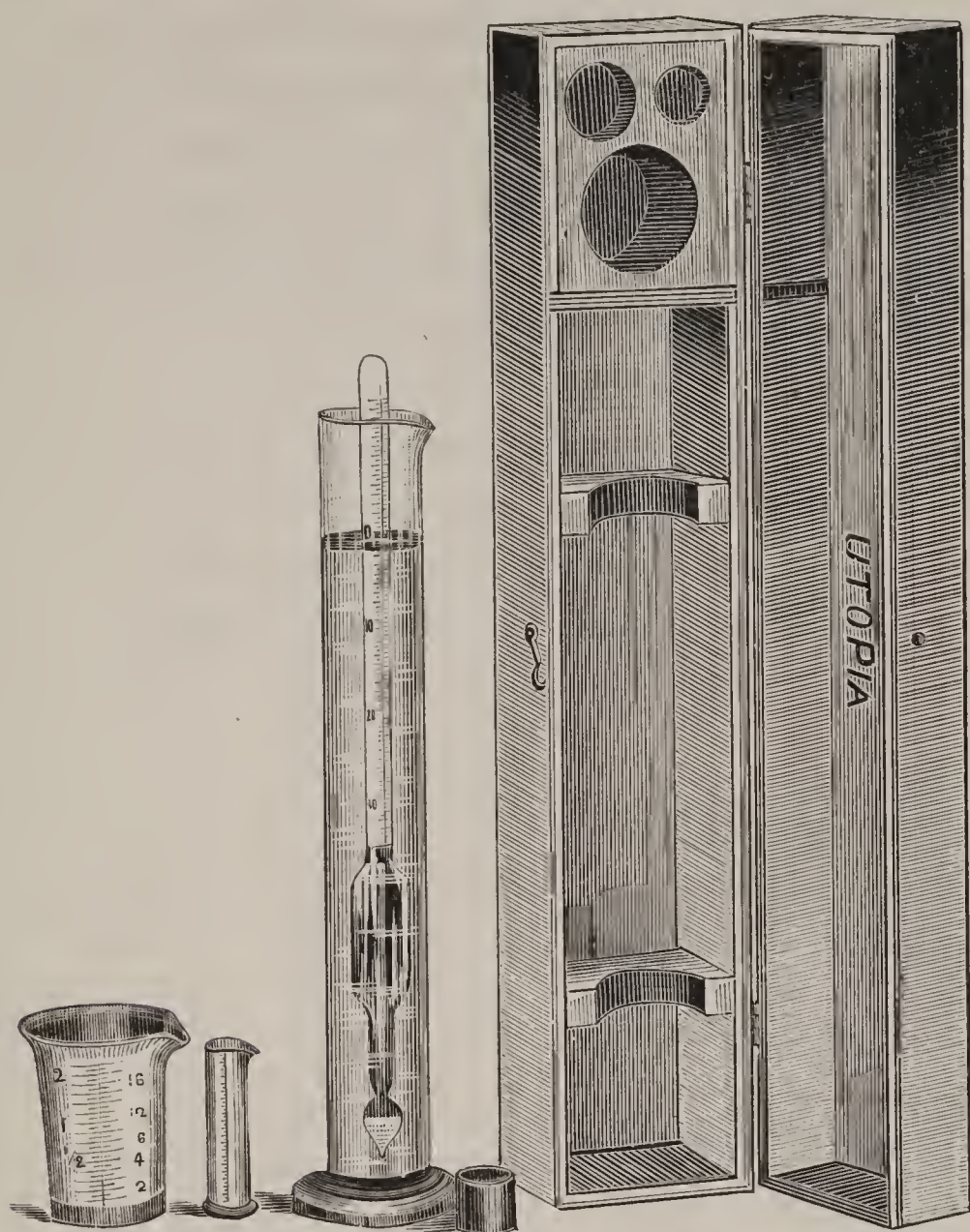
No. 47. Leecher for puncturing the limbs in dropsy cases to relieve water.... 1 50

No. 165. 1 lb. Roll Lintine for face covering and wrapping around the limbs in dropsy cases..... 75

No. 139. 1 Quart Hypodermic fluid for bleaching the face and hands, and injection under the skin..... 1 00

No. 142. 1 Dozen Disinfecting Cones..... 1 00

No. 162. 1 Box Antiseptic Lozenges..... 10



No. 202. Embalming Fluid Test Case. To better protect the glassware we have devised a case which will not take much space, and is gotten up plain, but practical. It contains the following:

No. 265. 1 Hydrometer Jar on foot, 12 in. high and 1½ in. wide.....\$0 75

No. 266. 1 Hydrometer from 0° to 40°..... 1 40

No. 267. 1 Acme Graduate, 2 oz..... 35

No. 268. 1 Cylinder Graduate, 2 dr..... 40

No. 269. Bicarbonate Soda Measure..... 10

Case for above..... 50

\$3 50

Any of the articles can be had separate.

No. 270. 1 Pint Iodine Test Solution..... 40

No. 271. 1 Quart, “ “ 75

No. 272. 4 oz. Bicarbonate of Soda..... 5

No. 273. 1 lb. “ “ 15

INSTRUMENT ROLL.

Having had a great many inquiries for something neat and convenient, in which instruments could be carried, separate from a satchel or cabinet, we have made, and now carry in stock, a fleece-lined Instrument Roll with enough loops made to fit the ordinary instruments, and a few extras, necessary for embalming. These rolls are similar to those carried by our agents, only they are not so large, the length being 17 inches and the width 14 inches. Larger rolls will be made to order at a proportionate increase in price, but parties desiring anything different than the above, will please give exact measurements, number of loops desired, etc.

We guarantee all our goods to be as represented or money will be refunded.

No. 277. Instrument Roll, 14x17.....\$5 00

UTOPIA

METALLIC

INSTRUMENTS

ATMOSPHERIC PUMP AND EXHAUSTER.



No. 16. This pump, which embodies within itself the dual properties of both an injector and of an aspirator, can be used for either purpose, according to the will of the operator. The action of the pump as an injector is based upon atmospheric pressure, *air* being forced by the pump *into* the bottle containing the fluid, thereby causing its escape out of a delivery tube into the body to be injected.

To use the pump as an aspirator it is only necessary to shift the supply tube from one nipple to the other. In this instance, the air is *exhausted from* an empty bottle connected with the pump, producing a vacuum which is gradually filled by the liquids contained in the body, as in dropsy and hydro-thorax. By operating the pump in this manner, it is evident that the danger of soiling either the clothing, the cooling board, or even the carpeting of a room, is entirely avoided, as the liquids withdrawn from the body are confined in a bottle which can be emptied when convenient.

As the fluid *does not enter* the body of the pump, it is obvious, that all its parts are beyond the possibility of corrosion, thus insuring its working durability for an unlimited time.

The accompanying cut and explanation will illustrate more fully the manner of working the pump. On the square block at the end of the pump can be seen two arrows pointing the direction of the air current; the one turned downwards indicates that through the corresponding nipple the air is forced into a bottle containing fluid, and the pressure thus exerted forces the fluid into either the arteries or cavities of the subject, as the case may be. The opposite arrow pointing upwards shows that suction is produced on that side. As in the preceding instance, the pump is connected with a bottle, this time an empty one, and a vacuum being created in the bottle by the working of the pump, all the liquids or gases contained in the thoracic and abdominal cavities, or the blood contained in the arteries and veins, can in this manner be pumped into the empty bottle without running the risk of soiling any of the surrounding objects.

In the modifications which have taken place of late in the embalming process, the splendid features of the pump are exhibited in a most forcible and interesting manner.

For instance, in certain cases the force side of the pump is connected with a bottle full of fluid, and the contents thereof injected into the arteries of the subject, while the exhausting side being connected with an empty bottle, as described above, the blood can be pumped out of the veins at the same time that the arteries are being injected.

THE FOLLOWING DESCRIPTION OF THE GOOSE-NECK MAY
SERVE TO CONVEY A STILL CLEARER CONCEPTION
OF THE MODE OF ACTION AND THE MECHANI-
CAL WORKINGS OF THE PUMP.



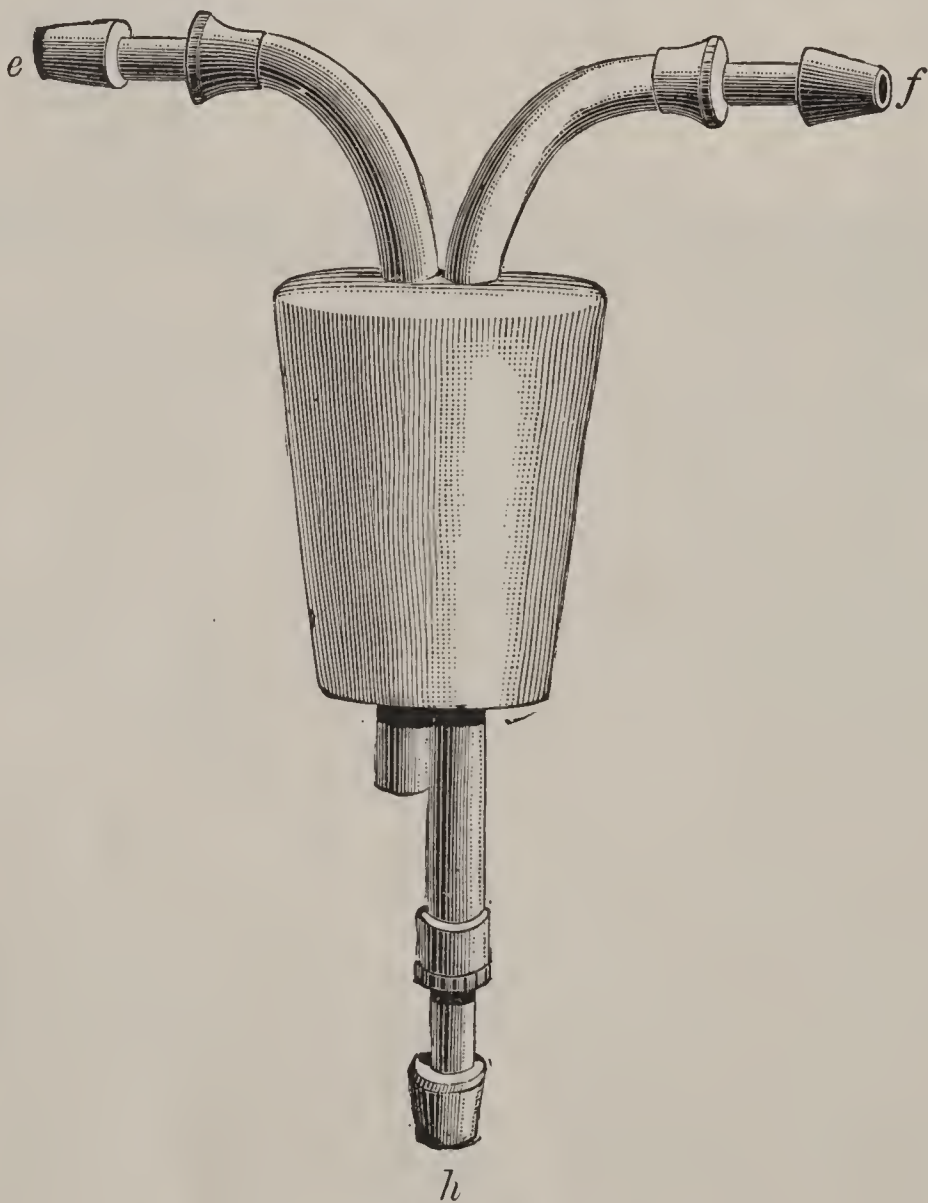
No. 4. ATMOSPHERIC PUMP, COMPLETE.

To use this apparatus as an *injector*, make your connections as indicated in the above cut, by slipping the rubber tubes *e* and *f* over and on to the respective ends of the double goose neck proceeding out of stopper, unto the tube *f g*: attach either a

nozzle or the embalming needle, as the nature of the operation may require; the tube *e d* being the air tube, is then attached to the outlet of the pump, *a*, at *c*; the standing tube *h* is then attached to the bottom of the stopper and inserted or immersed into the fluid, using the stopper for closing the opening of the vessel containing the same. By operating the pump when thus prepared, fluid is forced from the bottle through the tube *h h f f g*.

To use it as an *exhauster* remove the standing tube *h*, take an empty bottle, which may be securely closed by the stopper, and change the end of the tube *d* to the inlet of the pump *c*, when the desired result will be obtained by operating the pump.

- No. 4. Atmospheric Pump, complete, with instruments.....\$14 00
- No. 16. Atmospheric Pump, without instruments..... 10 00



No. 61.

No. 61. The Goose Neck is a rubber stopper pierced by two metallic tubes, *e* and *f*, and which fit tightly into the neck of the bottle. The shorter of the two tubes, *e*, is almost even with the under side of the stopper, and as it is solely intended as an air hole for the purpose of forcing or of exhaustion, it is *always* connected with the pump by means of a rubber tubing. The other tube, *f* and *h*, which protrudes for about one inch beyond the under side of the cork, is also connected by means of rubber tubing with the instruments, whether it be embalming needle or arterial nozzle, serves to convey liquids either to or from the bottles. This explanation of the uses of the goose neck may render the description of the workings of the atmospheric pump more clearly and lucid to our patrons \$2 00

THE EMBALMING NEEDLE

At times erroneously called trocar, is a sharp-pointed tube intended to be introduced into the abdomen for the purpose of injecting fluid into the cavities of the abdomen and the chest. The sectional needle is simply the same divided in two parts for the greater convenience of carrying it in a pocket case.

No. 18.	Embaling Needle	(9½ inches long)	.....	\$1 25
No. 18a.	“ “ “ “ “	tube smaller	....	1 25
No. 19.	“ “	(12 “ “ )	....	1 50
No. 20.	“ “	(8½ “ “)	sectional	1 50
No. 20a.	“ “	(6 “ “)	(eye trocar)	1 00
No. 274.	“ “	(12 “ “)	bent	1 50
No. 167.	“ “	“ “ “)	curved	1 50
No. 168.	Gas Needle,	15 inches	.....	2 00
No. 203.	Extracting and Injecting Needle	combined	.....	3 00
No. 204.	Renouard Needle,	15 inches	.....	1 75
No. 205.	Embaling “ “ “	.....	.....	1 75
No. 206.	“ “	perforated	.....	1 50
No. 207.	“ “	hard rubber, steel point	....	2 00
No. 208.	Renouard Needle,	gold plated point, 12 inches, 15 inches	.....\$2 00,	2 25
No. 209.	Embaling Needle,	gold plated point, 12 inches, 15 inches	.....\$2 00,	2 25
No 210.	Renouard Needle,	detachable point, 12 or 15 inches long	....	1 75

See illustration on page 58.

ALUMINUM INSTRUMENTS.

In offering this line of Aluminum goods we desire to call attention to the following advantages which it possesses, and to make some suggestions as to the care and use of instruments made of this metal. Among the advantages are its lightness, and articles made of Aluminum do not require plating, but retain their original appearance after long use. Instruments made of Aluminum are only about one-third the weight of those made of the ordinary metals used, hence are to be preferred both in use and for carrying. As the metal is not as hard as brass or composition, care should be taken, if you wish to preserve the polished surface, not to knock or rub them against hard or rough surfaces as might occur if thrown loose into a bag with other instruments.

An advance of 25 cents over price of our regular instruments is made for the following: Embalming Needles, Renouard Needles, Cavity Exhausting Tube, Arterial Nozzles, Nasal Tubes, Leecher, Forceps, Artery Washer, Goose-neck. The Atmospheric Pump made of Aluminum, \$2.00 extra.

RENOUARD ALUMINUM NEEDLE.

ALUMINUM EMBALMING NEEDLE.

EMBALMING NEEDLES.



No. 18.



No. 18a.



No. 19.



No. 20.



No. 21.



No. 26.

The Renouard Needle is a sharp pointed tube having perforations in a spiral line, extending from the point to about the middle of the needle. It is introduced in the abdomen in the same manner as the embalming needle, but it is used to remove gases or liquids from the cavities, stomach and intestines, and being perforated in many places is not so apt to become obstructed as the embalming needle by the tissues through which it passes.

No. 21.	Renouard Needle.....	\$1 50
No. 22.	“ “ sectional	1 50
No. 22a.	“ “ 6 inches long	1 00



No. 23.

No. 23. The Hypodermic Needle. A small, slender, hollow needle, which is introduced under the skin of the face or hands to inject fluids, where slight patches of discoloration have commenced to make their appearance.

By the aid of this most valuable little instrument the above symptoms can be instantaneously removed, and by skillful handling the small puncture made by the needle can be entirely concealed \$1 50



No. 24.

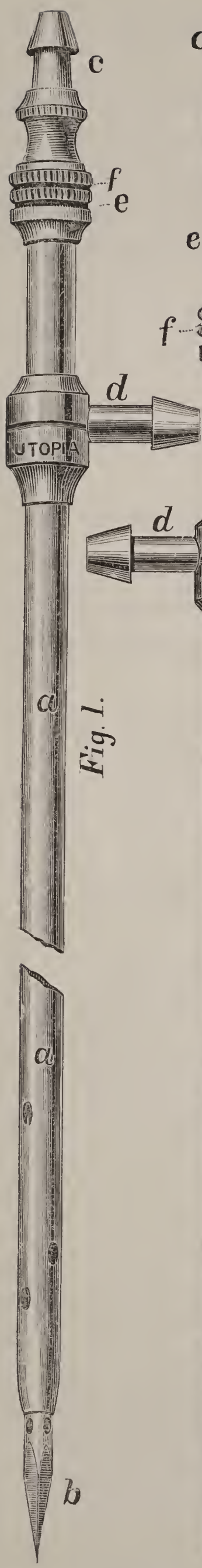
No. 24. The Infant Trocar, a short tube about four inches in length, is provided with a sharp rod to facilitate its insertion. It is chiefly used for injecting the air passages in cases where it is impossible to inject the fluid in any other way. It is also successfully employed for injecting the brain, where the arterial circulation has been destroyed 1 50



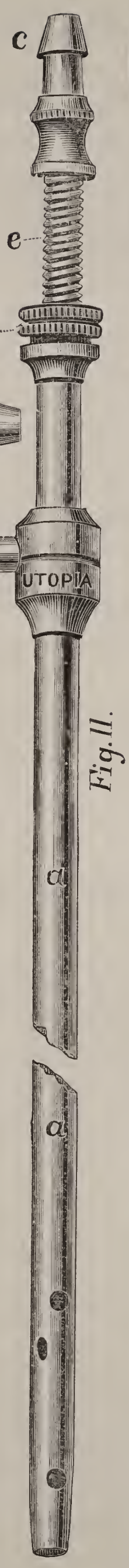
No. 25.

No. 25. Hypodermic Needle (platina, 1¼ inches long)..... 75
(See description of No. 14.)

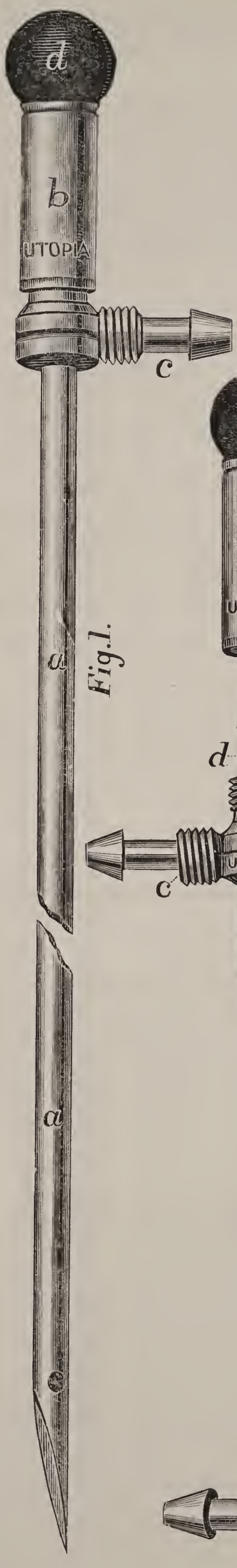
No. 26. Cavity Exhausting Tube. This a blunt hollow needle, perforated in all directions up to about one-third of its length. It is used for removing dropsical water from the abdominal cavity, and not being provided with a sharp end, its introduction into the abdomen is not attended with the danger of perforating any arteries or destroying any parts of the circulatory system \$1 50



No. 203



No. 168



No. 274



Fig. III.

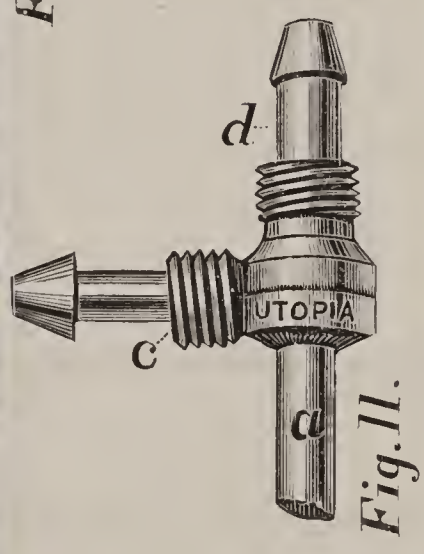
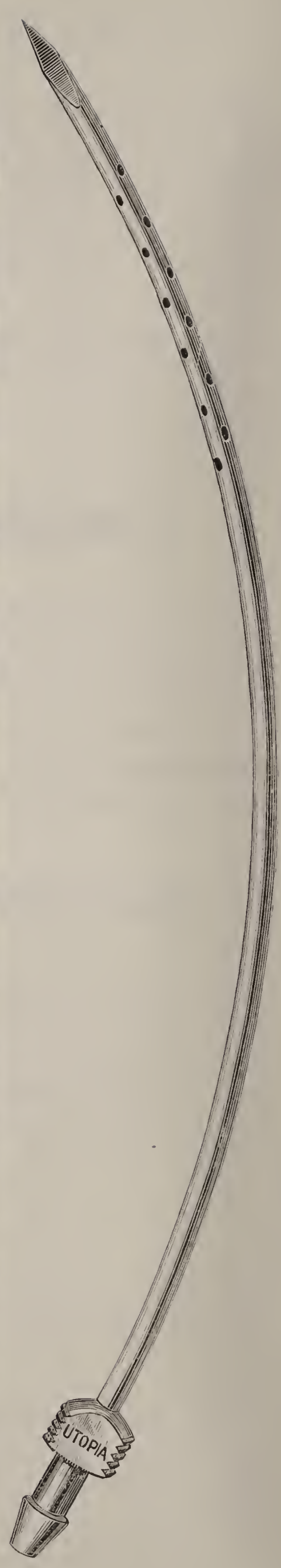


Fig. II.



No. 167

No. 168. Gas Needle. This needle has its origin in the desire to avoid the very often unpleasant matter which the cavities contain, being forced against the hand, and soiling the cuff or coat, when entering the cavities. Also, to supply a better bearing (*d*) for the hand, when pushing the needle through the abdominal wall, at the same time allowing the gases or liquid matter to escape through an outlet (*c*) into a bottle or other vessel, by connecting the same with tubing. The protector, *b* and *d*, can be unscrewed and placed on the outlet nipple (*c*), or can be left off, as the case may demand. Fig. I. shows needle ready to puncture the abdomen; *a* is the tube; *b* is the hollow tube which screws over the nipples; *d* is a hard rubber ball-shaped handle, firmly secured in the cap (*b*); *c* is the nipple through which the gases, etc., escape. Fig. II. shows the protector when in use. Fig. III. shows the needle without the protector and exposing nipple (*d*).

Price..... \$2 00

No. 274. Renouard Needle, bent at right angle on the injecting end. The object of this shaped needle is to prevent the tubing from kinking. Price..... 1 50

No. 167. Renouard Needle—Curved. This needle is intended to more readily reach the lumbar regions. Both of the above needles were suggested by Mr. W. C. Barber, of Geneva, N. Y., and they have found favor with those who have used them. Price..... 1 50

No. 203. Injecting and Extracting Needle—Combined. This needle will be found very useful in many instances. It enables the operator to inject and extract a cavity at the same time, thereby washing out the same and cleansing it of all liquid matter, which so often is the cause of failure, if not properly removed. It also does away with cutting an opening into the abdomen to allow the old cavity needle (No. 26) to enter, as, after puncturing the abdomen, the point can be either screwed out partially, as shown in Fig. II., or be removed altogether. No arteries can be injured and all matter can be extracted from point *d*, on which the hose is fastened. To extract the liquid matter only with the “Utopia” pump, a soft rubber thimble is placed on nipple (*c*). When injecting, the tubing is connected on nipple (*c*), the point (*b*) having holes to admit the passage of the fluid. As the fluid fills up the cavity, the gases, which may be contained therein, escapes easily through the outer tube (*a*) and nipple (*d*).

(*a*) is the outside perforated tube of the needle; (*b*) is the point of the injecting needle, with holes, which allows the fluid to pass through; (*c*) is the injecting nipple connected with the injecting needle; (*d*) is the extracting nipple connected with the outside tube; (*e*) is the screw thread on injecting needle; (*f*) is the set screw to fasten the injecting needle when partially drawn out, as in Fig. II. Fig. I. shows the needle ready for injecting and extracting. Fig. II. shows the needle for extracting only; only the soft thimble, which in this case should be on nipple (*c*), is not shown. Price..... 3 00

No. 210. Renouard Needle, detachable point, 15 in \$1 75



PATENT APPLIED FOR.

No. 211. The Renouard Nozzle, with rod \$0 75

This nozzle is supplied with a blunt tapering rod (a), over which the tube fits closely, thus preventing the annoying possibility of pushing forward the inner coat of the artery, when inserting the tube, as is often done with the old style nozzles. They are made in four sizes.



No. 212. Renouard Nozzle \$0 50



No. 213. Renouard Nozzle 50



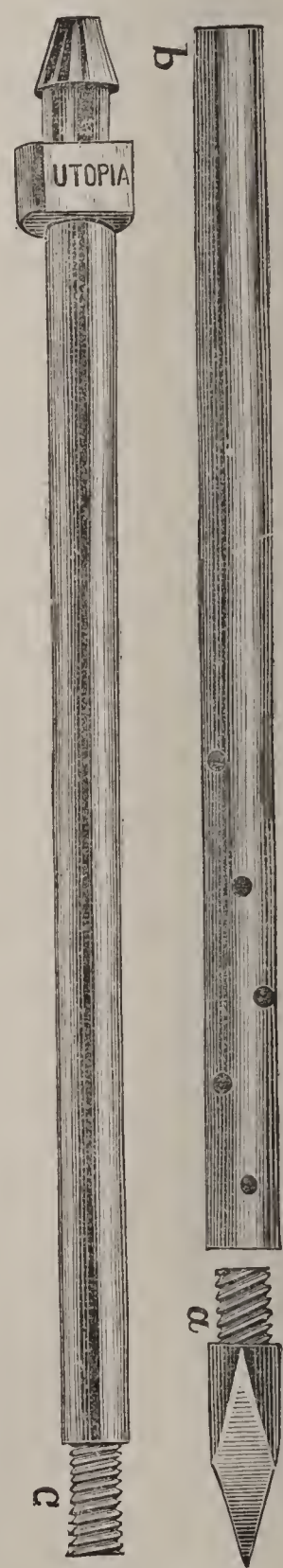
No. 214. Renouard Nozzle 50



No. 215. Renouard Nozzle 50



No. 216. Arterial Nozzle, four sizes 50



No. 210.

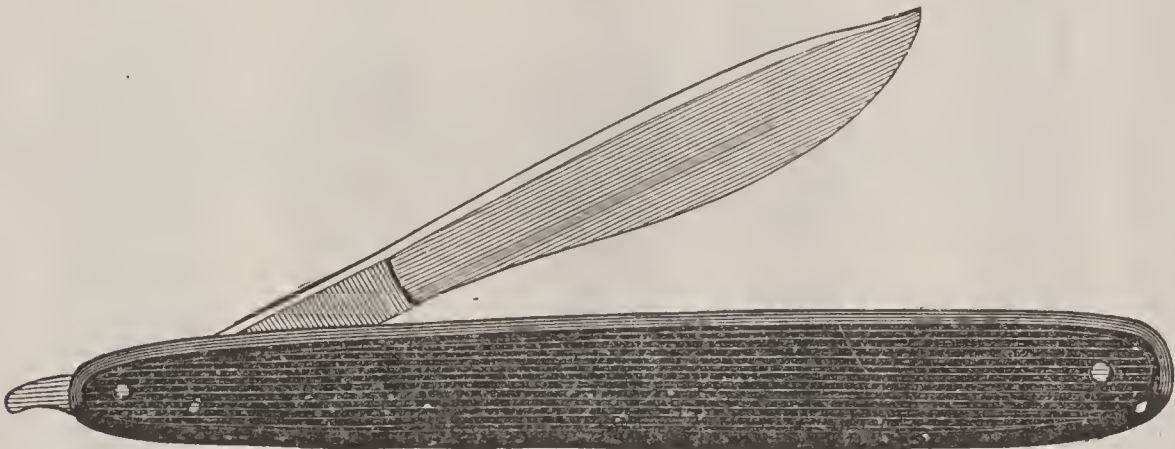
No. 28. Scalpel. The knife commonly used to incise the skin when it is desirable to raise an artery. The scalpel with the antiseptic handle can be so easily and thoroughly cleansed as not to retain the least traces of its use. The folding scalpel, like all other instruments so articulated, is devised for carrying in the pocket case. Price \$0 50

No. 29. Scalpel (ivory handle) 1 00

No. 30. “ (antiseptic handle)..... 1 00



No. 28.

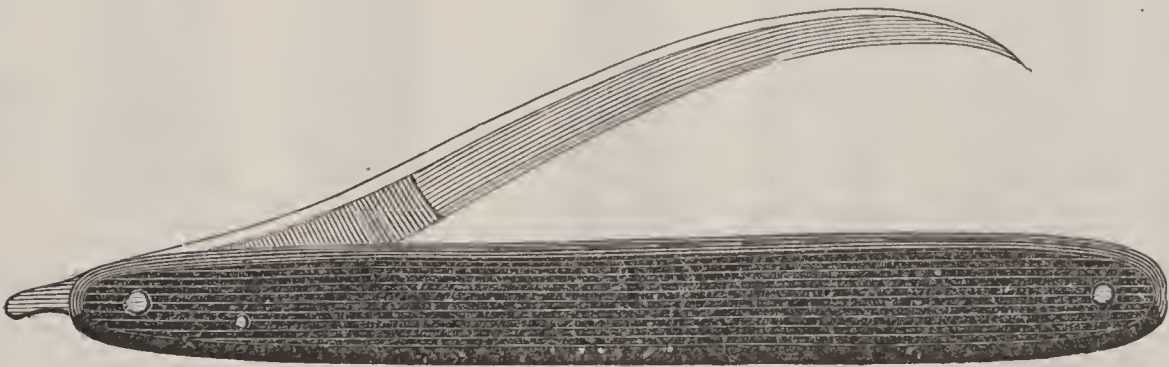


No. 31.

No. 31. Scalpel, folding (rubber handle) 75

No. 32. “ “ (turtle shell handle, with catch) 1 75

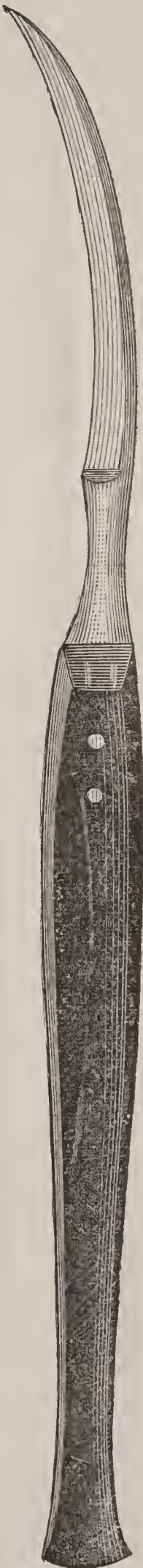
No. 33. Bistouri. A thin, curved bladed knife, used with the fascia needle to separate membranes and the sheath surrounding the arteries and veins. Price 1 00



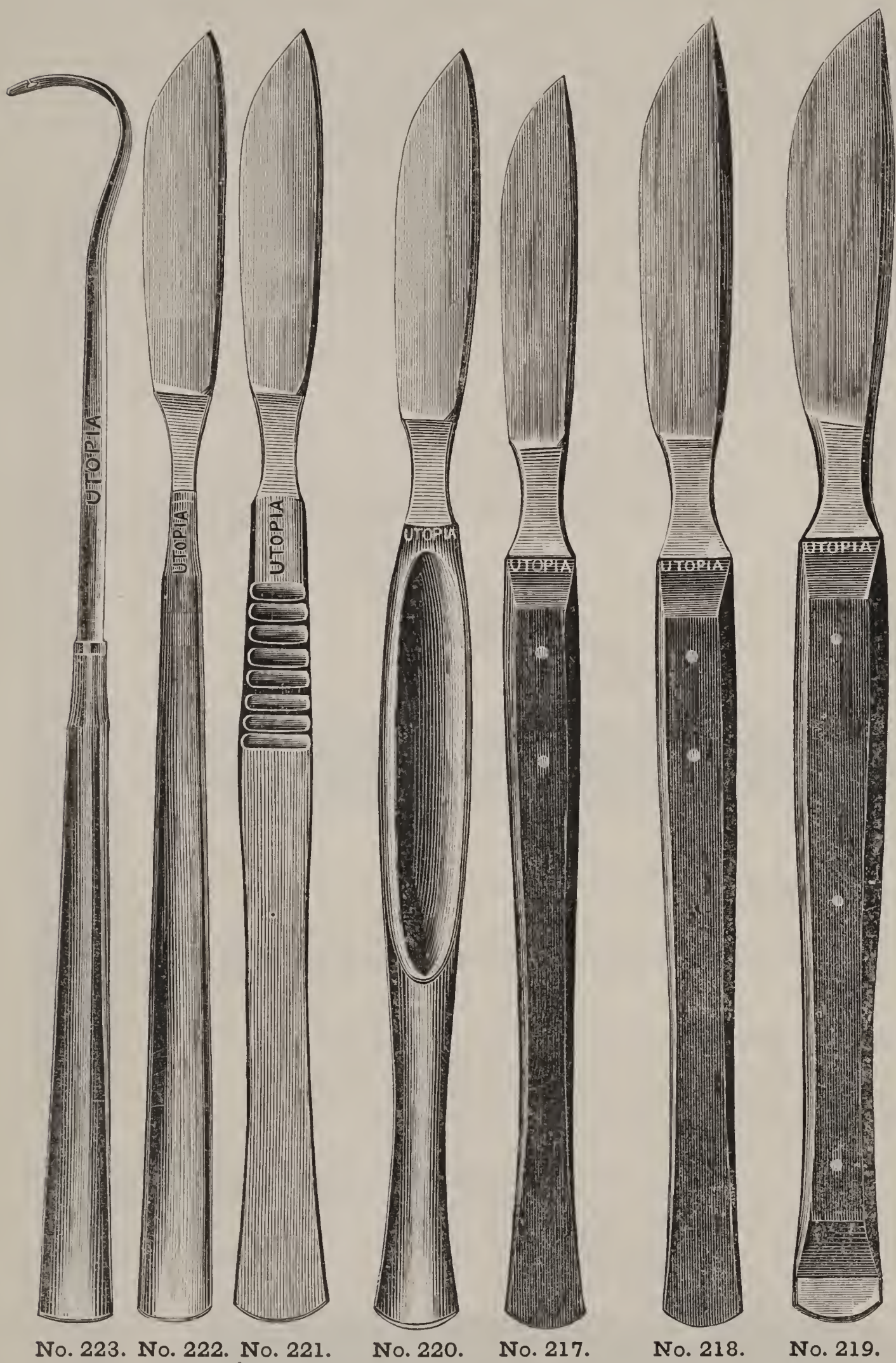
No. 34.

No 34. Bistouri, folding..... 1 50

No. 35. “ “ with catch 1 75



No. 33.



No. 217.	Scalpel, medium size blade.....	\$0 50
No. 218.	“ large “	75
No. 219.	Cartilage knife.....	1 00
No. 220.	Scalpel, antiseptic hollow handle (metal).....	1 40
No. 221.	“ solid “	1 15
No. 222.	“ “ “Utopia” handle (metal).....	75
No. 223.	Aneurism needle, patent eye	75

No. 223. No. 222. No. 221. No. 220. No. 217. No. 218. No. 219.

No. 223. This needle, which is practically the same as No. 36, described on page 61, is provided with an opening in the side of the eye, which allows the needle to be threaded by simply passing the thread into the slot, thereby avoiding the often tedious process of pushing the thread through the eye.

No. 262. Catling knife, Antiseptic handle, blade 6 inches long \$2 75



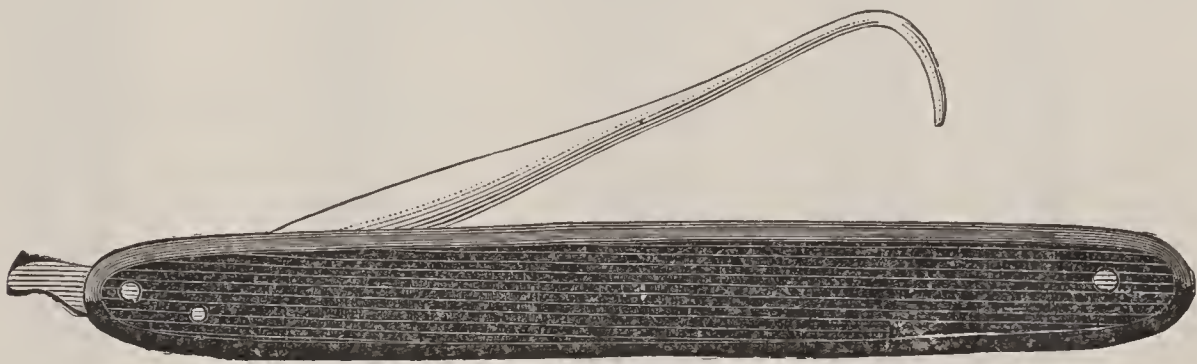
No. 55.

No. 55. The Director or Fascia Needle is introduced groove upwards under the fascia, covering the muscles, and also into the sheath surrounding the arteries and veins; and the bistouri being run into the groove, the operator is thus enabled to separate the parts without incurring the risk of destroying any of the arterial or venous branches. Price \$0 75



No. 36.

No. 36. Aneurism Needle is in the shape of a hook provided with an eye at its extremity, by which means a ligature can be easily passed under an artery or a vein 50



No. 37.

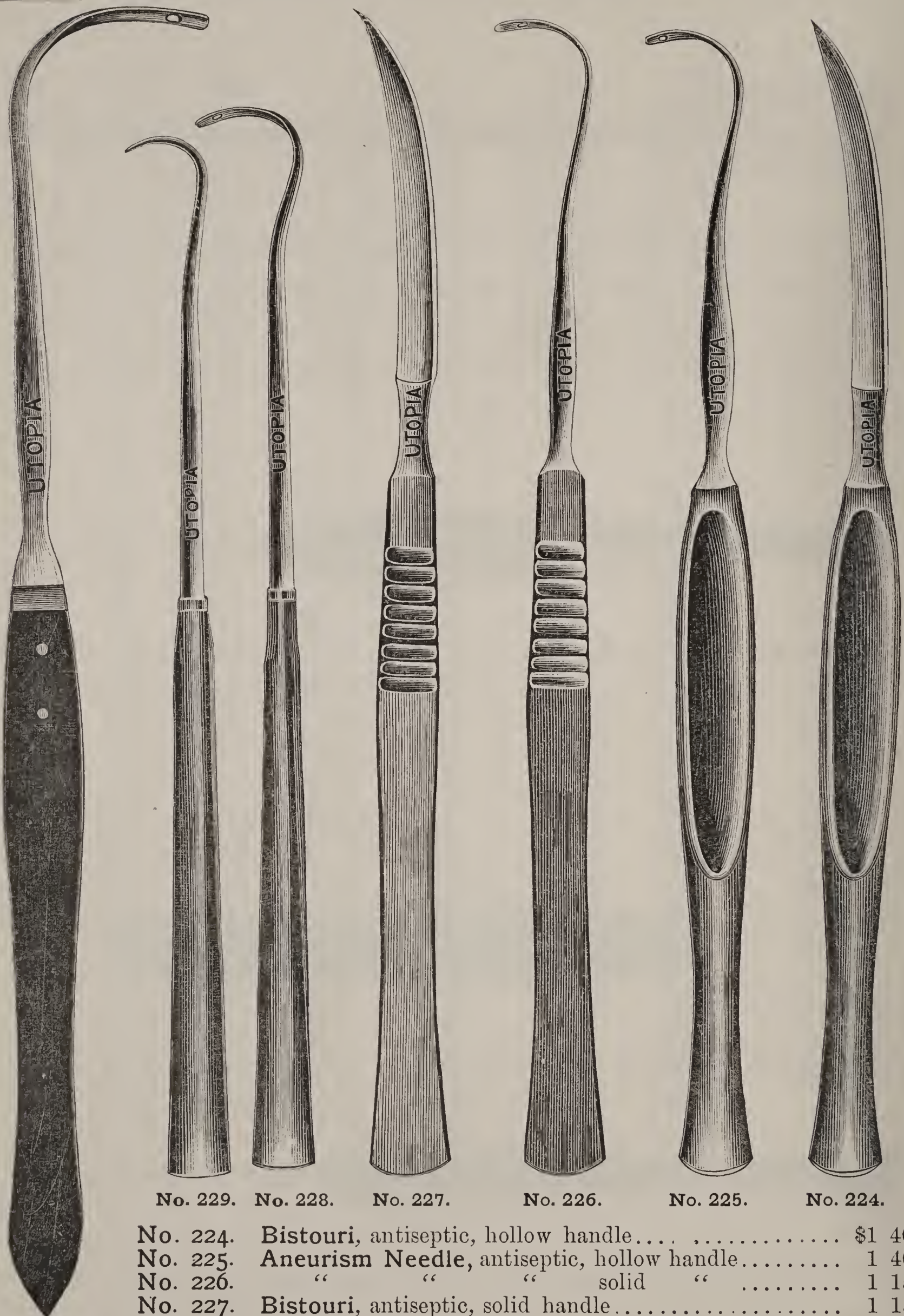
No. 37. Aneurism Needle (folding) 75



No. 38.

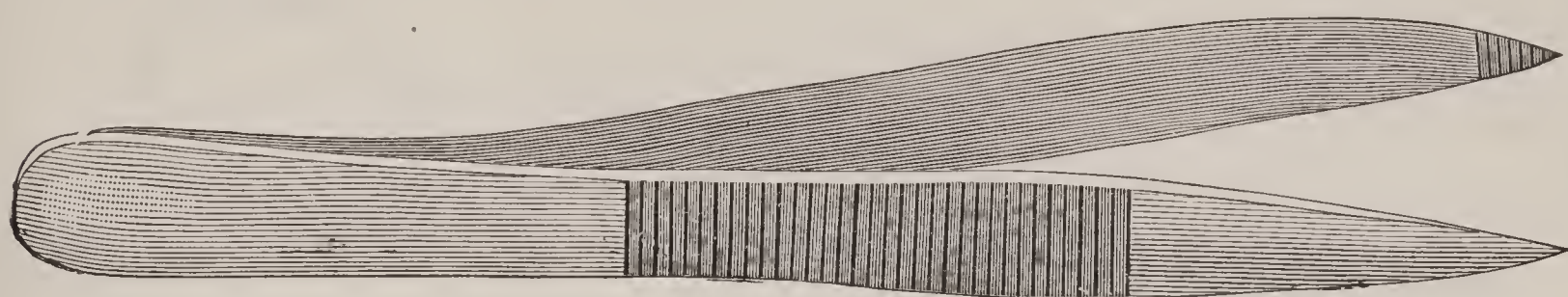
No. 38. Arterial Hook. For raising to the surface any nerve or blood vessel exposed to view 50

No. 39. Arterial Hook (folding) 75



No. 230.

No. 224.	Bistouri, antiseptic, hollow handle.....	\$1 40
No. 225.	Aneurism Needle, antiseptic, hollow handle.....	1 40
No. 226.	“ “ “ solid “	1 15
No. 227.	Bistouri, antiseptic, solid handle.....	1 15
No. 228.	Aneurism Needle, antiseptic, “Utopia” handle....	75
No. 229.	Arterial Hook, “ “ “	75
No. 230.	Aneurism Needle, large, ebony.....	75



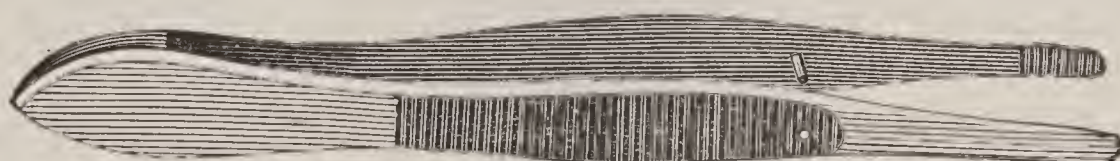
No. 40.

No. 40. Artery Forceps. For seizing and holding the arteries \$0 50



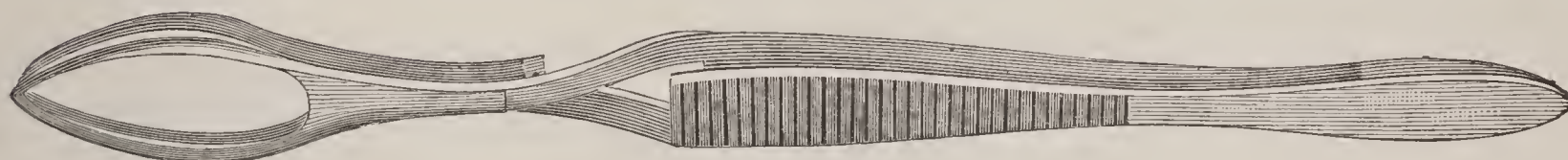
No. 41.

No. 41. Smaller Forceps 75



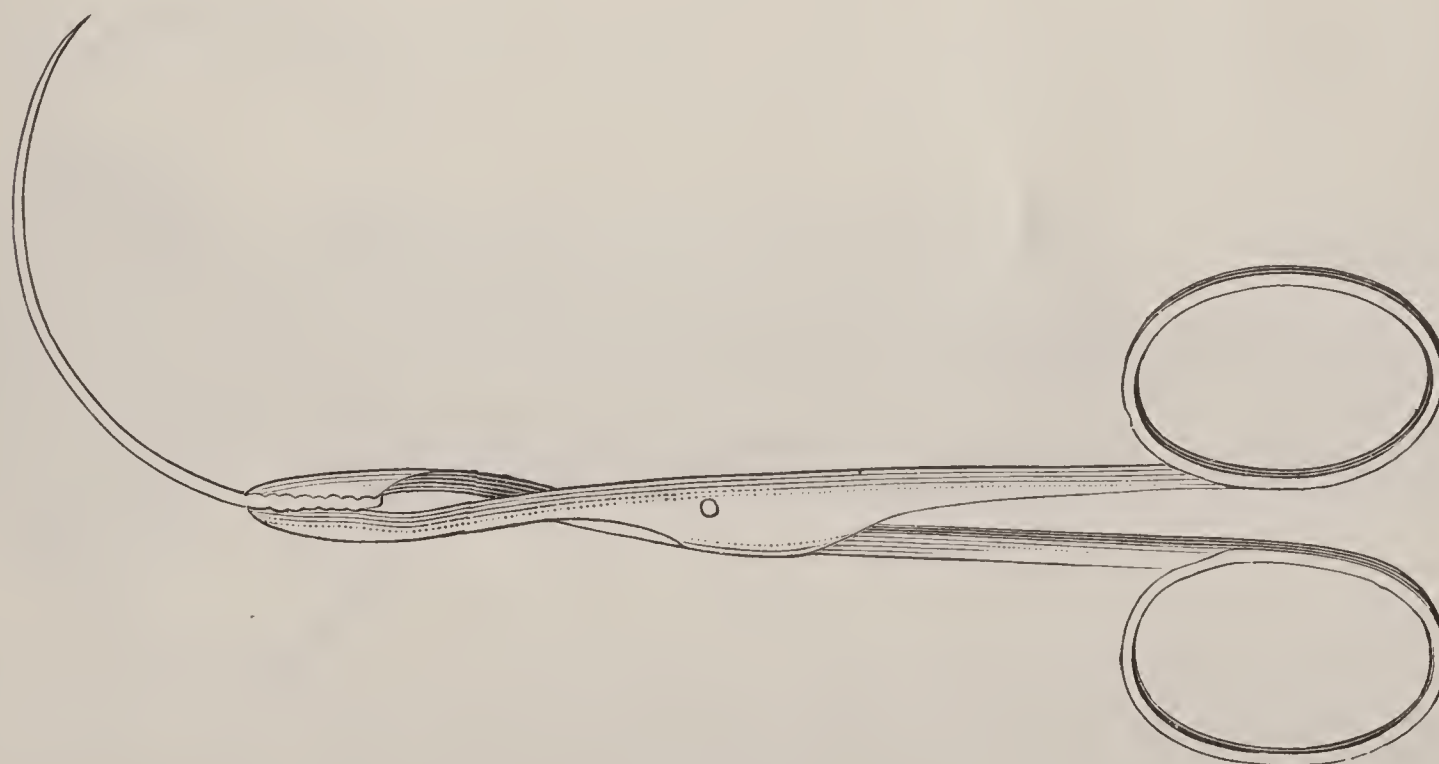
No. 41a.

No. 41a. Small Forceps 75



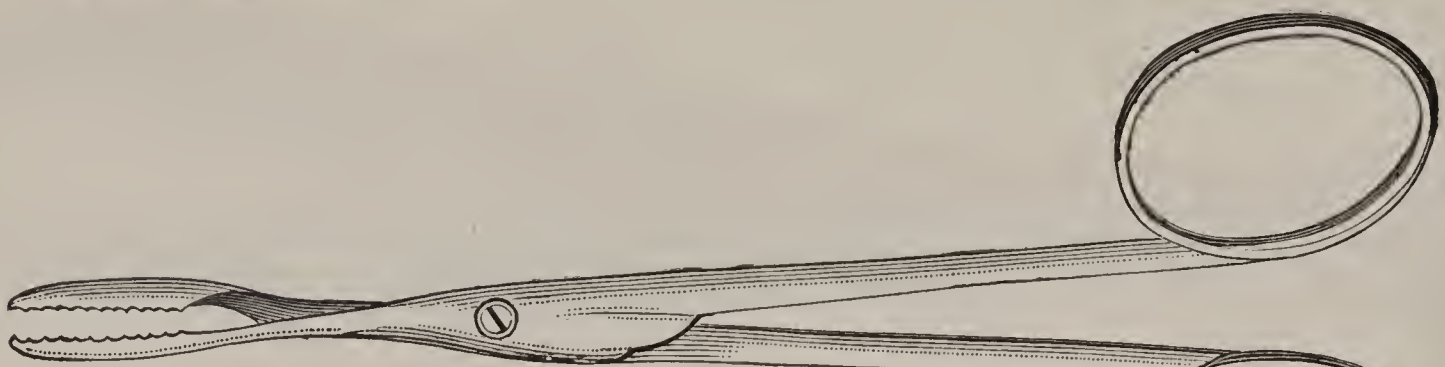
No. 42.

No. 42. Fine Cross Action Forceps. Provided with a spring for holding the artery automatically, after the pressure of the hand has been released..... 2 00



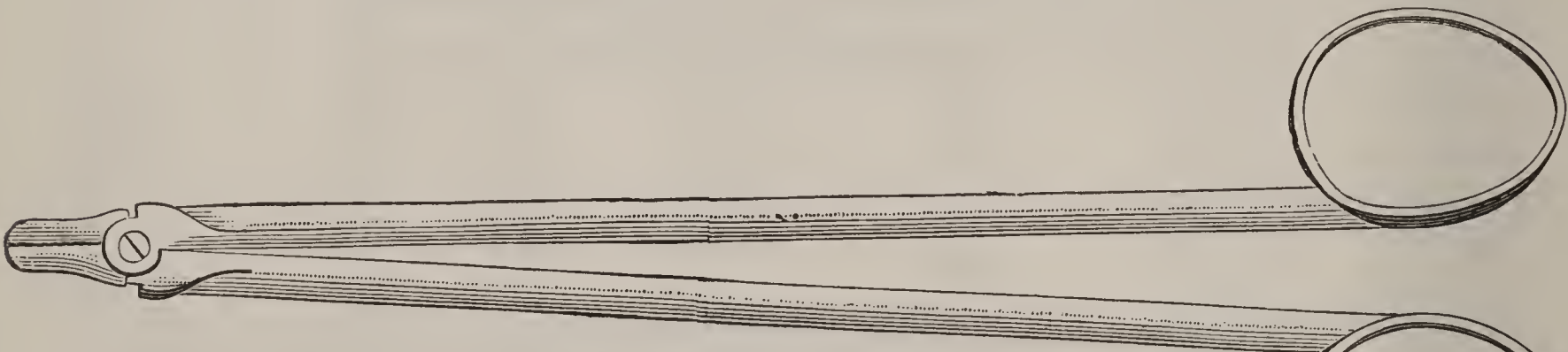
No. 43.

No. 43. Needle or Artery Holding Forceps..... 1 00



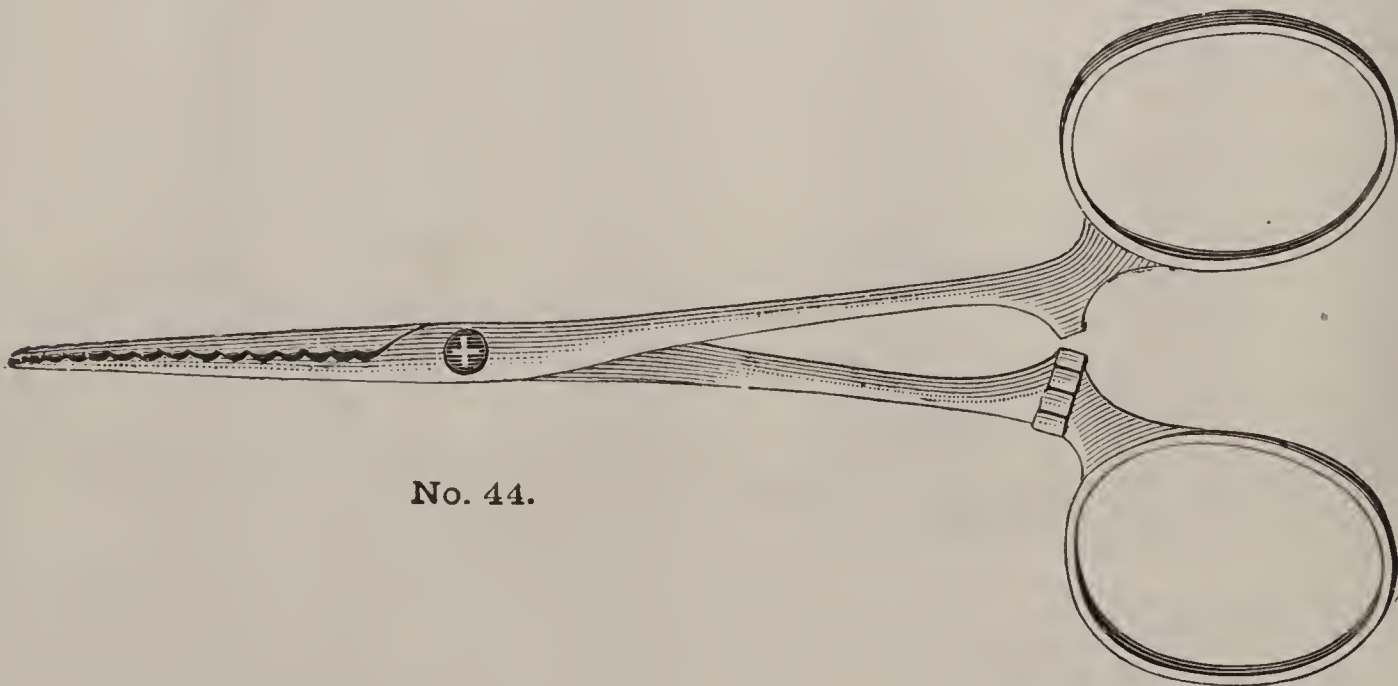
No. 43. NEEDLE HOLDER.

No. 43. Needle or Artery Holding Forceps. This is an improved form of forceps, whereby a firmer hold of an artery can be obtained than with the usual tong-like instruments. These forceps are also used at times to work the surgeon's needle when sewing up the wound made for the raising of an artery where the skin is tenacious and the needle passes through with difficulty. The forceps are then used in place of the fingers, which might accidentally receive cuts by slipping over the sharp edges of the needle.\$1 00



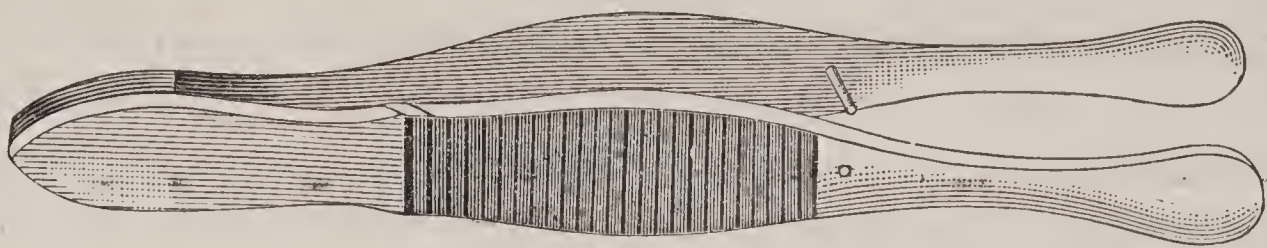
No. 43a. NEEDLE HOLDER.

No. 43a. Nearly the same as above, only larger\$1 25



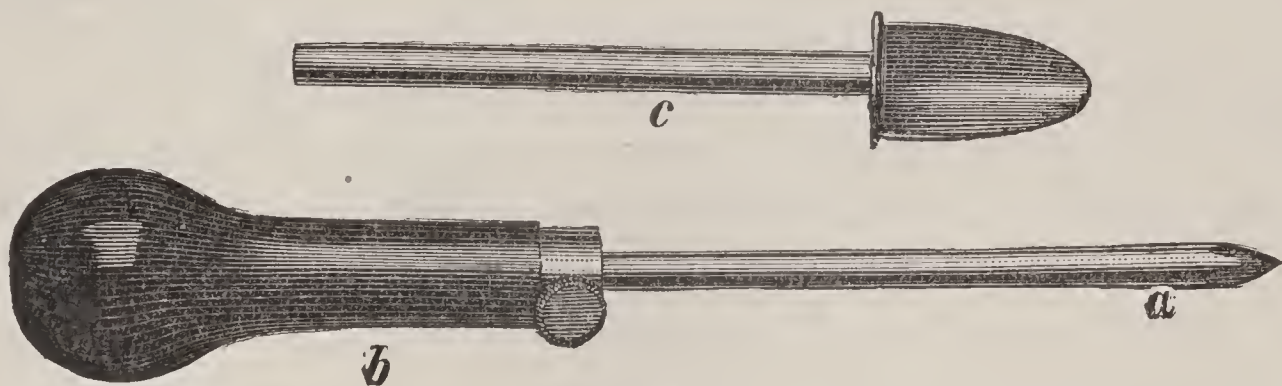
No. 44.

No. 44. Needle or Artery Holder, with Catch. The same as the preceding, but provided with self-locking contrivance, which, after seizing the parts, continues to hold it firmly, allowing the pressure of the fingers to be relaxed.....\$1 25



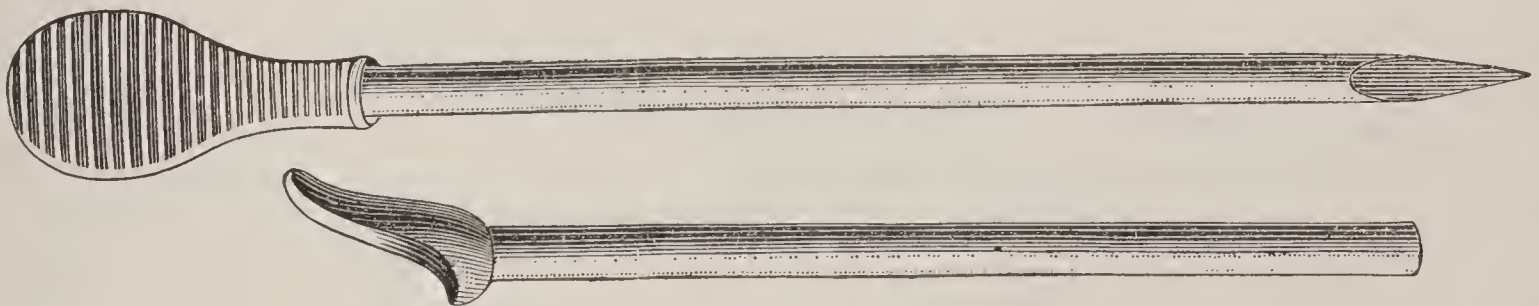
No. 45.

No. 45. Eye Forceps. These are intended to close the eyelids where they have so far receded that it becomes well nigh impossible to seize them with the fingers and bring them into position. The interior of these forceps is smooth and polished, and do not leave any abrasions on the delicate texture of the eyelids.... \$1 00



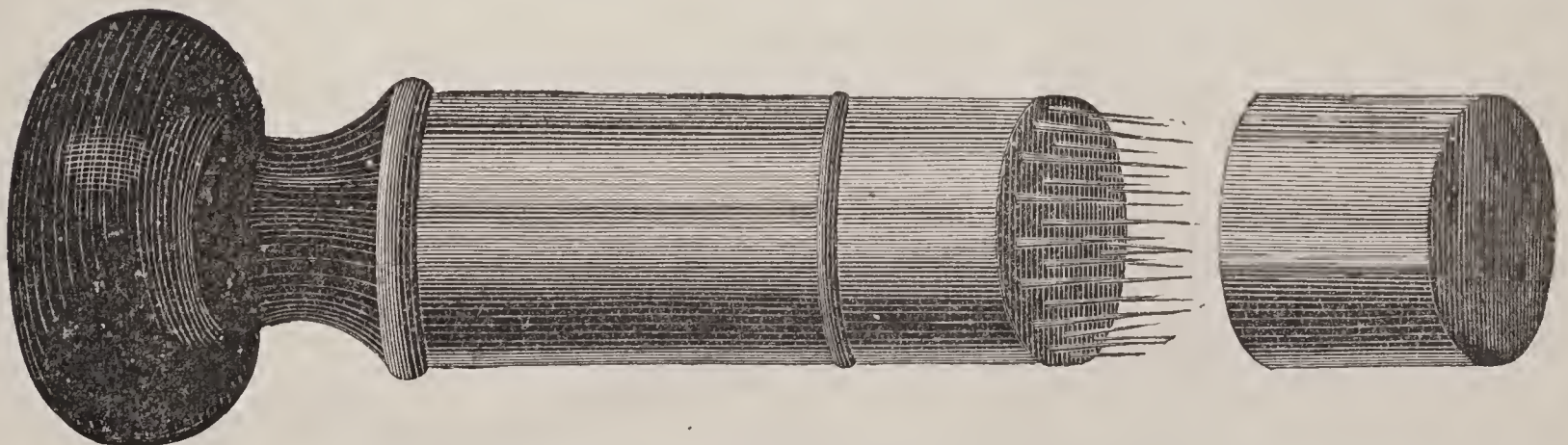
No. 46.

No. 46. Reversible Trocar. A tube provided with a sharp rod, inserted in an ebony handle, and held in place with a set screw. When not in use, the sharp end of the rod is inserted in the handle for protection. This trocar is used to draw the water from the abdomen in cases of dropsy. The scoop-like terminating of the tube allows the liquid to be collected into any vessel held under it.... 1 50



No. 138.

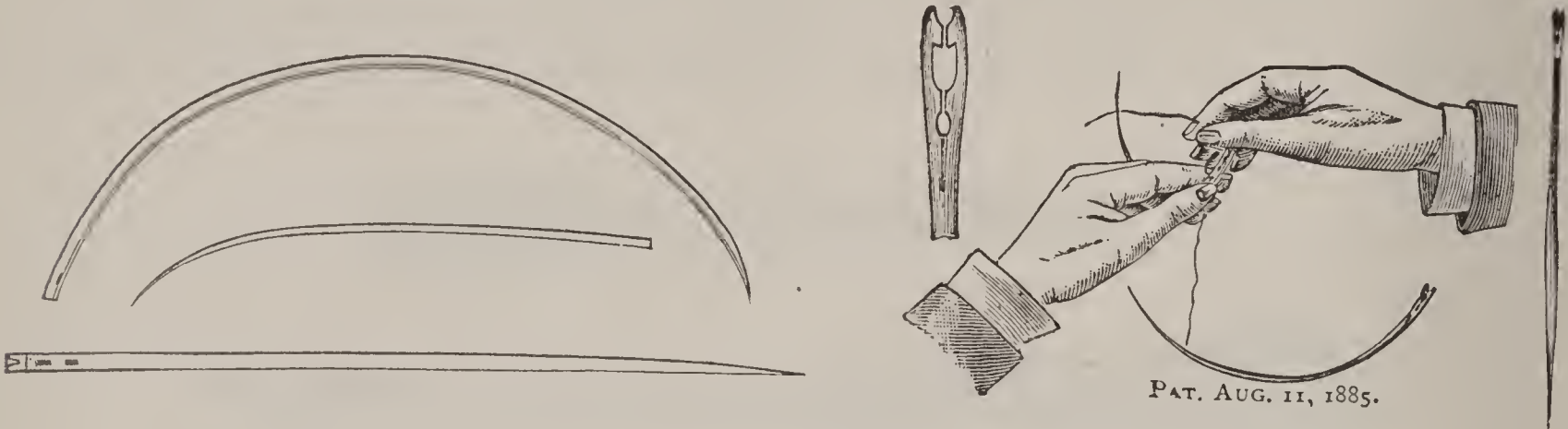
No. 138. Trocar for Pocket Case..... 1 50



No. 47.

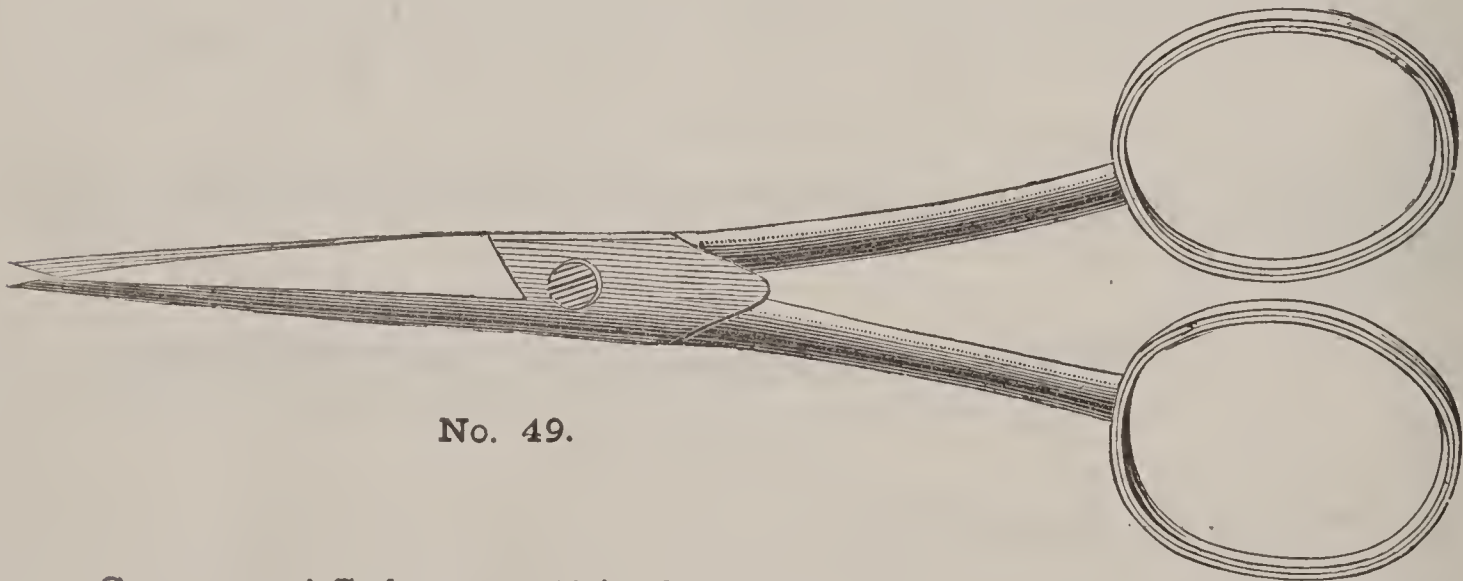
No. 47. Leecher. An instrument provided with many sharp needle-like points. When not in use the points are protected by a metallic cap nicely adjusted on the extremity. The leecher is of incalculable value in cases of dropsical swellings in the feet, legs, arms, and other parts of the body. By puncturing the

skin with the leecher and bandaging the parts tightly, the water contained in the tissues is forced out through the numerous punctures made by the leecher, and the formation of water sacks, so annoying a feature in general anasarca, is obviated. The punctures made by the slender points are so minute as to be almost imperceptible \$1 50



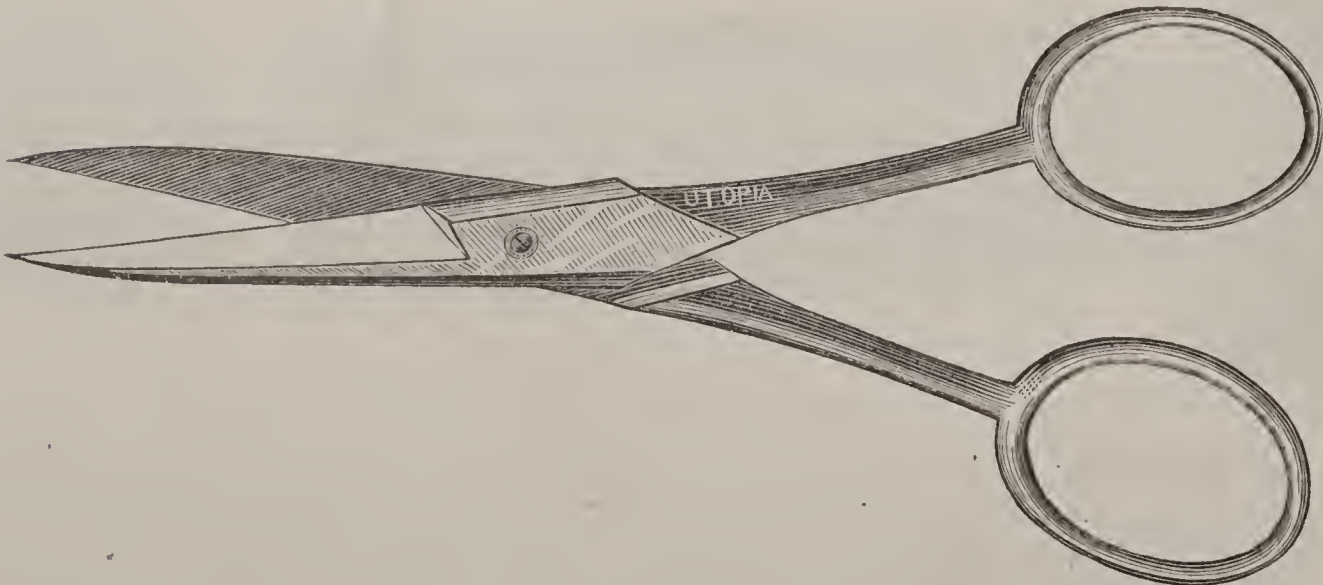
No. 48.

No. 48. Surgeons' Needles, Patent Eye. These present the novel feature of possessing a slit head, through which the thread is passed without having recourse to the tedious process of threading through the eye.....each 10

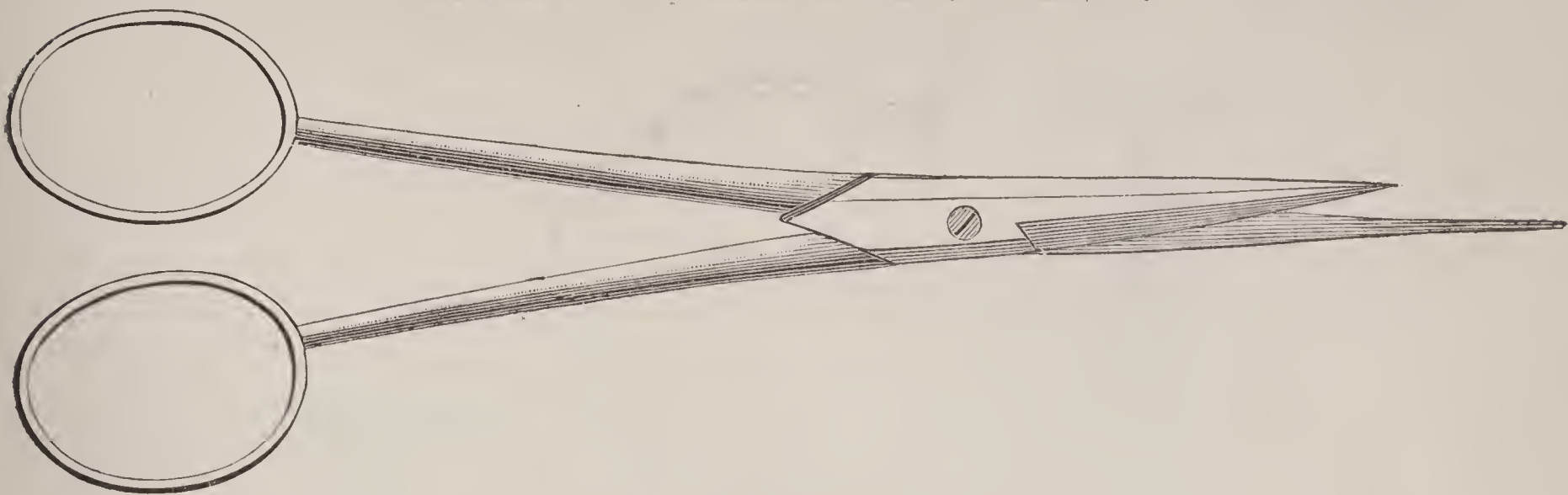


No. 49.

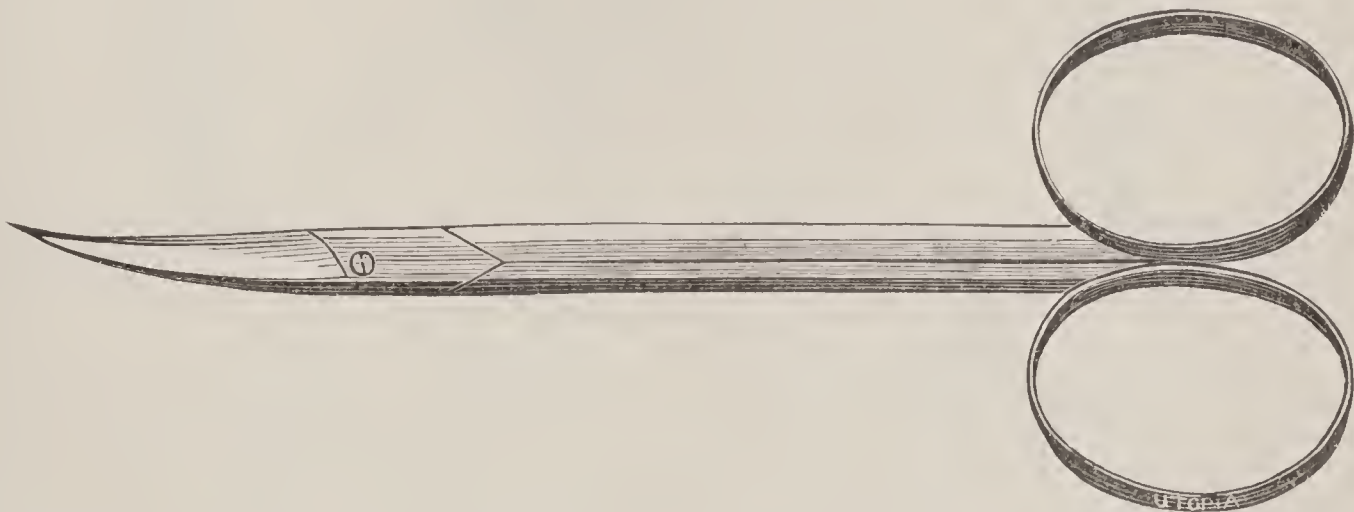
No. 49. Surgeons' Scissors, 4½ in. long and very sharp, to incise the arteries, 50



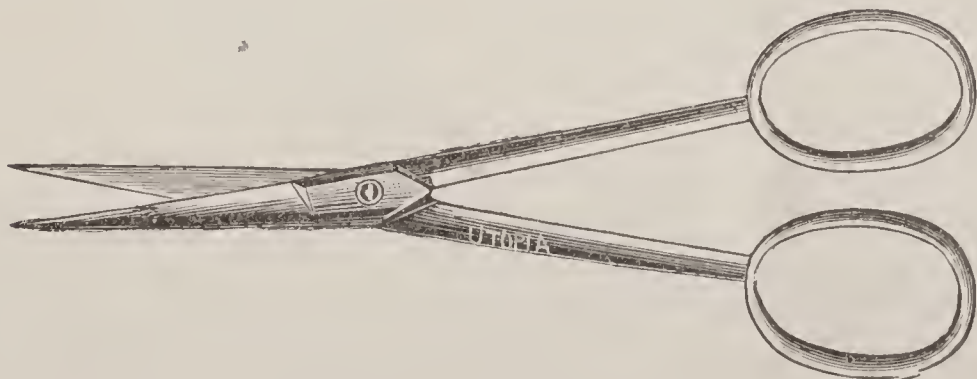
No. 231. Surgeons' Scissors, 4 in. long..... 50



No. 49a. Arterial Scissors. Are provided with a rod-like elongation of one of the branches. When the artery has been opened with the sharp point, the rod in the other branch is passed into the opening to make certain that the cut is of sufficient size to admit the arterial nozzle attached to the pump..... \$1 75



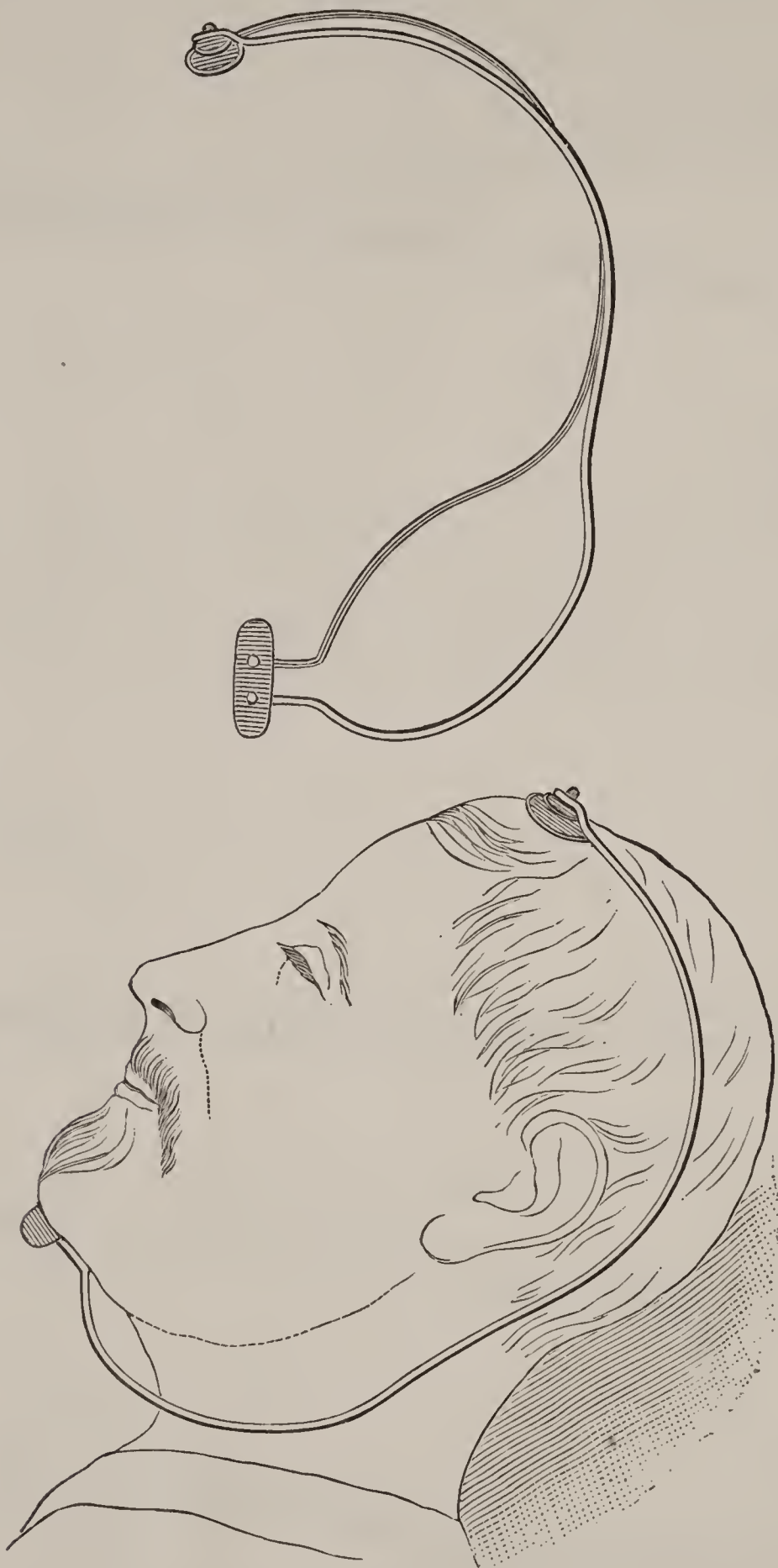
No. 232. Curved on Flat Scissors..... \$1 00



No. 233. Small Dissecting Scissors..... \$0 75

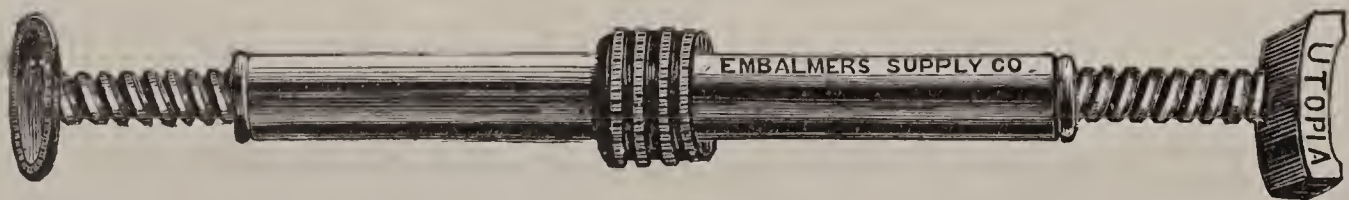


No. 207. Hard Rubber Embalming Needle. Steel point, 10 and 13 inches, each \$2 00

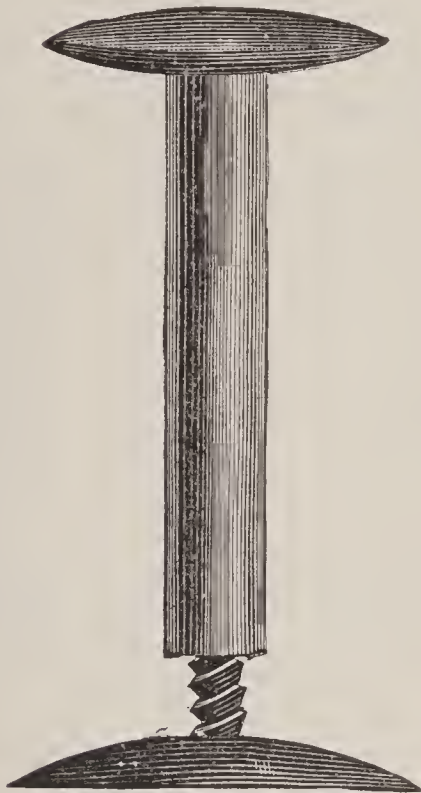


No. 50.

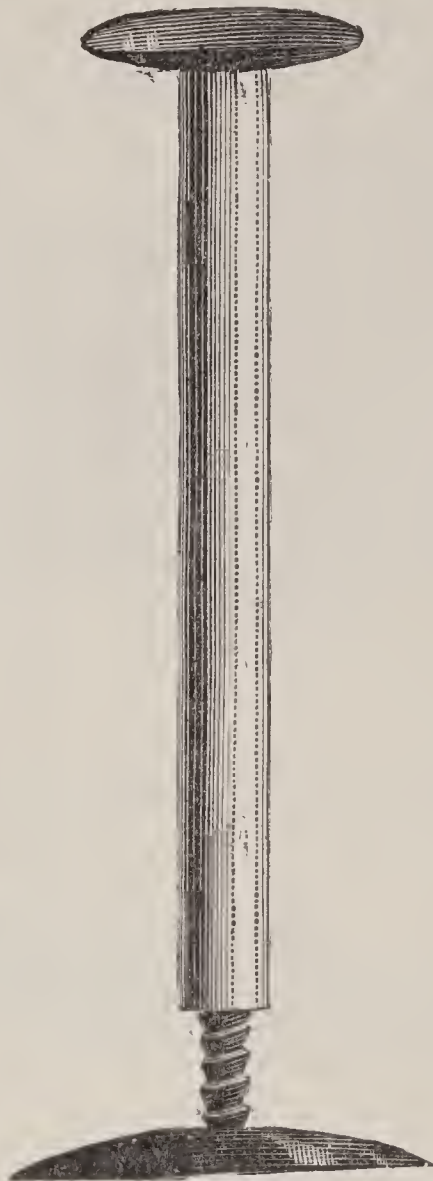
No. 50. Utopia Chin Supporter. Formed of two prongs, which surround the head and neck in such a fashion as to be concealed. The ends of the prongs are held by their own elasticity on the top and back of the head, while the opposite extremities meet under the chin, and insure the perfect closing of the mouth.....75 cents.
(No. 50, Patented.)



No. 235. The E. S. Co. Chin Supporter. This supporter is constructed with a right and left screw, and by holding the ends stationary and turning the tube, in which the screws revolve, it will extend to the required size. Price...50 cents.

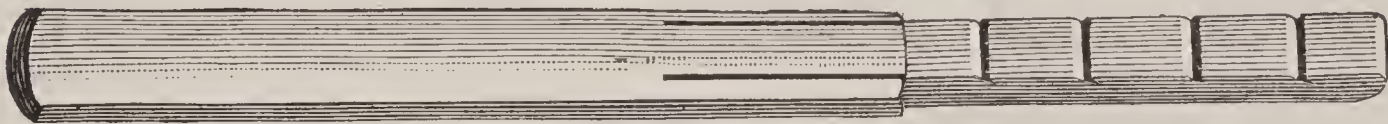


No. 51.



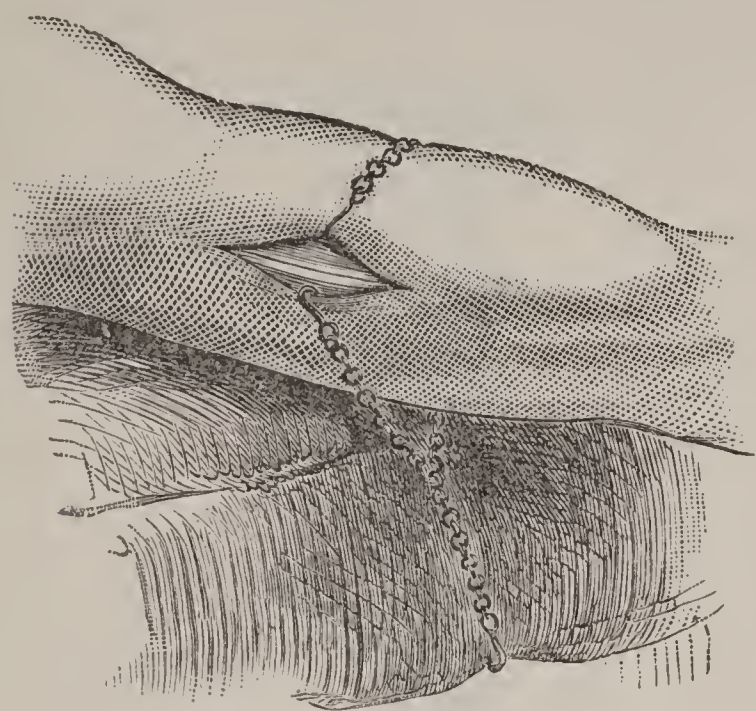
No. 51.

No. 51. Gem Chin Supporters. A branch screw, working inside of a tube provided with a disk at both extremities. One end is placed in the hollow of the throat at its base, and by gradually turning the branch screw, the upper disk is by degrees brought in contact with the chin until the mouth has been closed. Set of two..... \$0 75



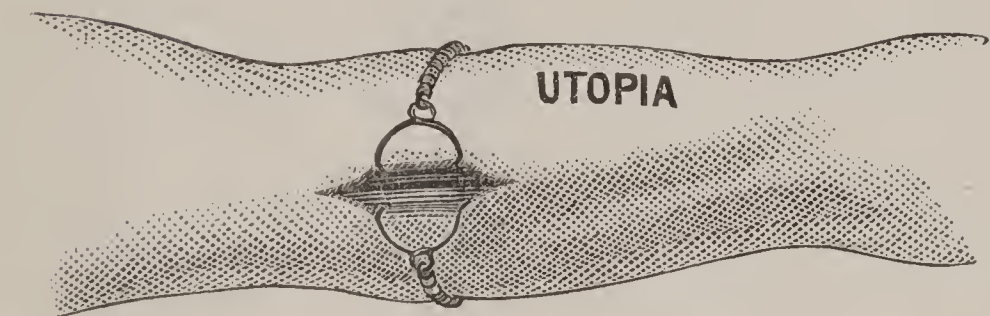
No. 52.

No. 52. Genoung's Chin Supporter. Made of metal, the inner slide provided with notches, caught by a spring, which hold it in position when the proper length has been obtained. Each, 20 cents. Per dozen..... 2 00
(Patented June 4, 1878.)



No. 53.

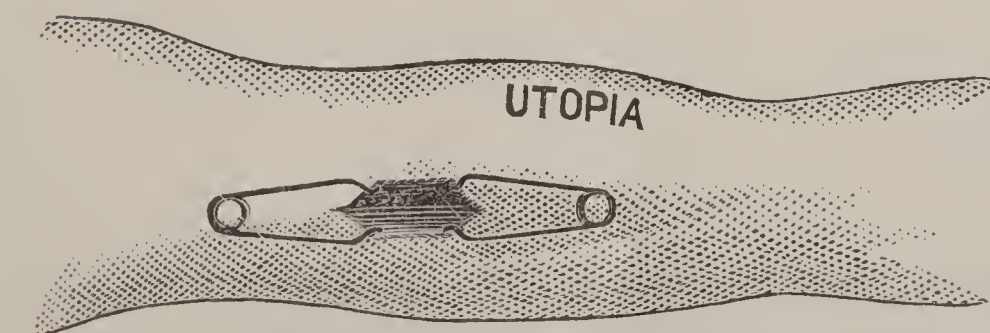
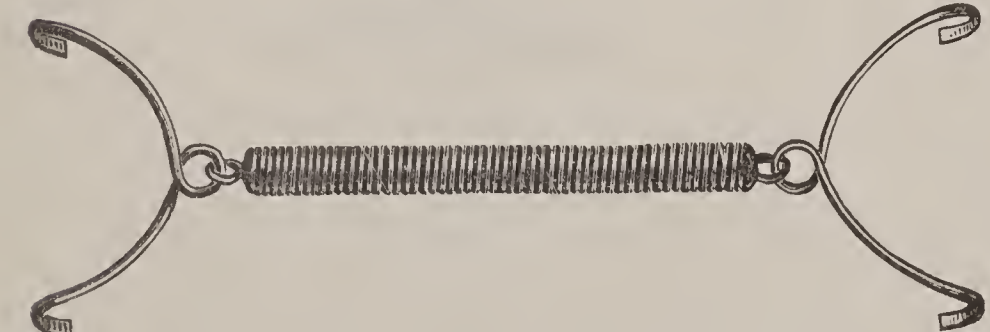
No. 53. Chain and Hooks. A brass chain provided with hooks ; it may be passed under and around the arm or leg, and the hooks attached to the edges of a cut made to raise the artery in such a manner as to keep the wound open to facilitate the operation.....\$0 30



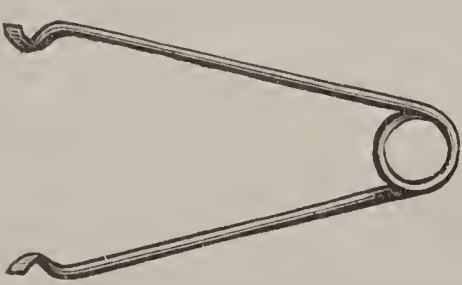
No. 236.

RENOUARD'S AUTOMATIC
STRETCHERS.

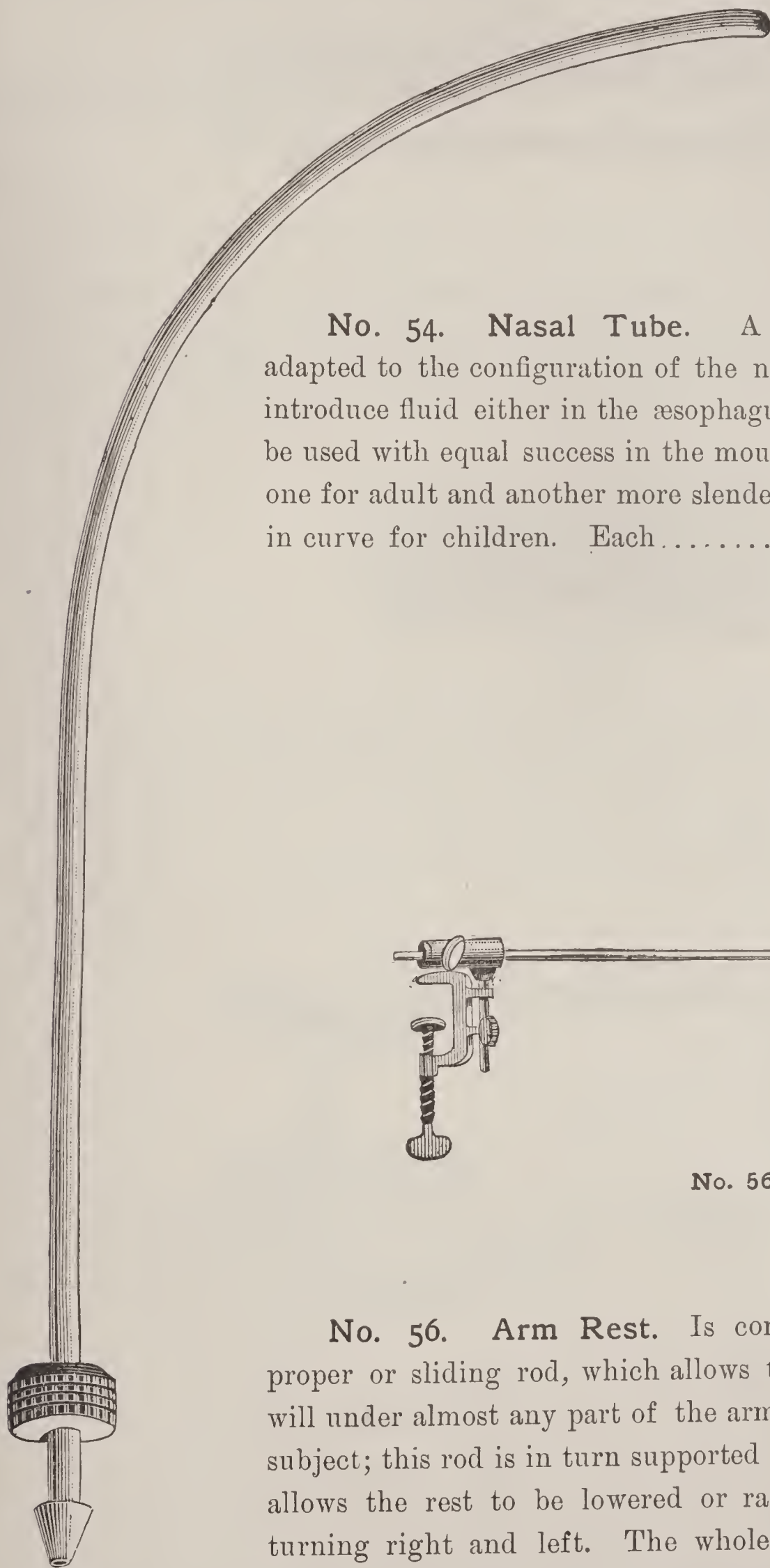
These stretchers are to be used for the same purpose as the ordinary chain and hooks, only they are much simpler in construction and easier to handle. Both are made of the best steel wire and will out-last several sets of the common chain and hooks now in use. They are heavily nickel-plated, and the same superior grade of workmanship characterizes their make-up as is maintained in all goods of our manufacturer.



No. 237.

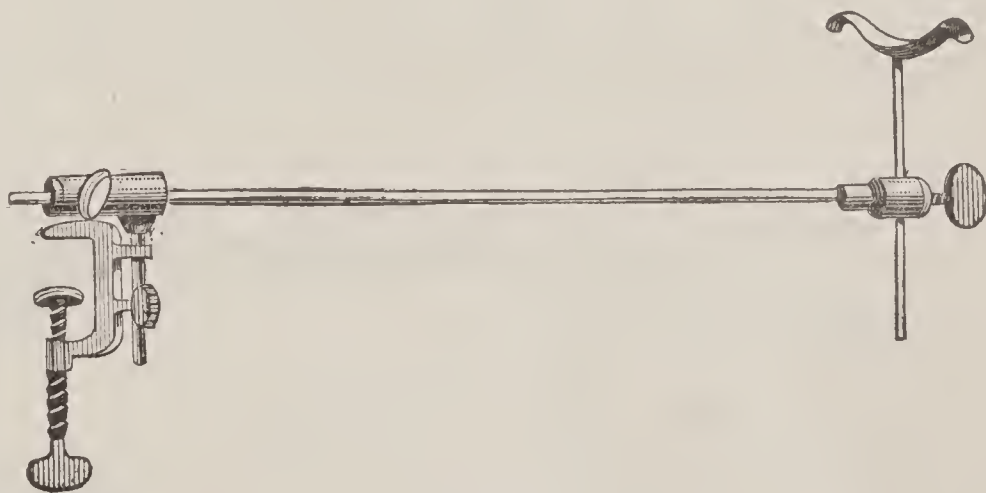


No. 236.	The Renouard Automatic Stretcher,	with spiral spring.....	\$0 50
No. 237.	“ “ “	one pair	50



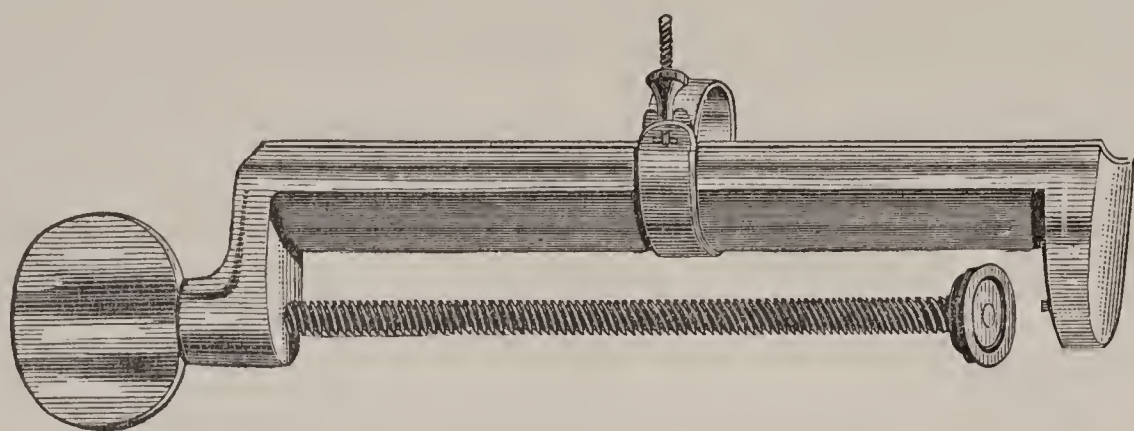
No. 54.

No. 54. Nasal Tube. A tube whose curvature is adapted to the configuration of the nasal fossæ, and serves to introduce fluid either in the æsophagus or the trachea ; it can be used with equal success in the mouth. Two sizes are made, one for adult and another more slender and somewhat different in curve for children. Each.....\$1 00



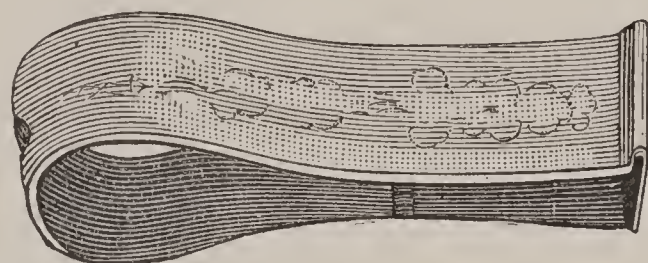
No. 56.

No. 56. Arm Rest. Is composed of the arm rest proper or sliding rod, which allows the rest to be removed at will under almost any part of the arm, near to or far from the subject; this rod is in turn supported by a vertical stem, which allows the rest to be lowered or raised as desired, and also turning right and left. The whole is secured by a system of set screws, which hold the different parts in the position chosen. The arm rest is fastened to the cooling board by a screw clamp, which can be attached to any point of the board, 2 00



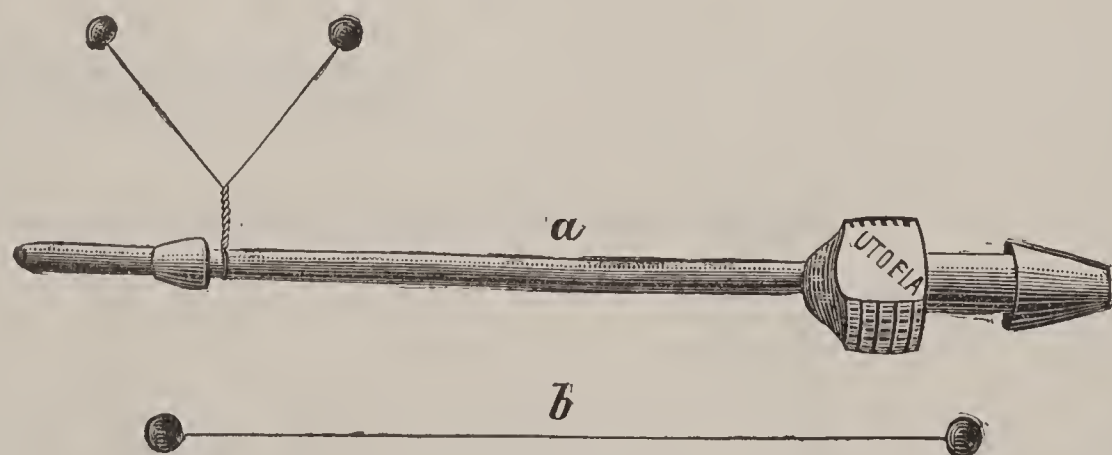
No. 57.

No. 57. Pump Holder for Atmospheric Pump. A set screw clamp holding the pump, can be fastened at any convenient part of the cooling board, thus leaving the operator the freedom of his hands and fixing the pump steadily in the proper place \$1 50



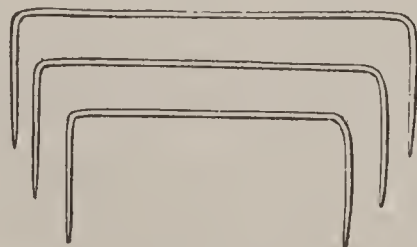
No. 58.

No. 58. Cut-off. A snap spring through which the supply tube passes. The cut-off when closed suddenly and effectually, stops the flow of the fluid..... 25



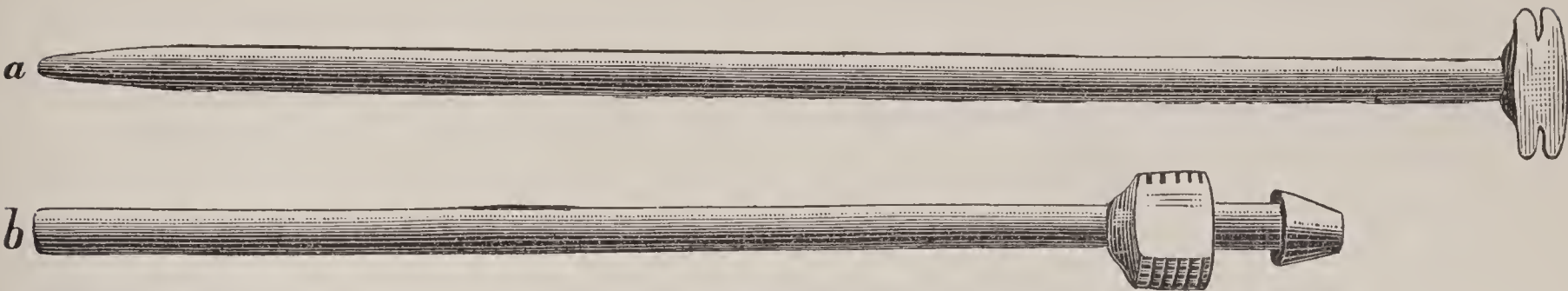
No. 59.

No. 59. Artery Binders. A short copper wire, provided with a brass knob at each extremity. They are an elegant substitute for thread in ligating the arteries.....per dozen, 25



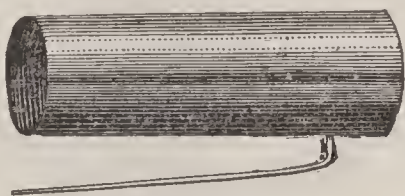
No. 60.

No. 60. Cleats or Mouth Closers. Made of steel wire, sharp at both ends, which are introduced in the upper and lower gums to keep the mouth closed. Per dozen, three assorted sizes 50



No. 61a.

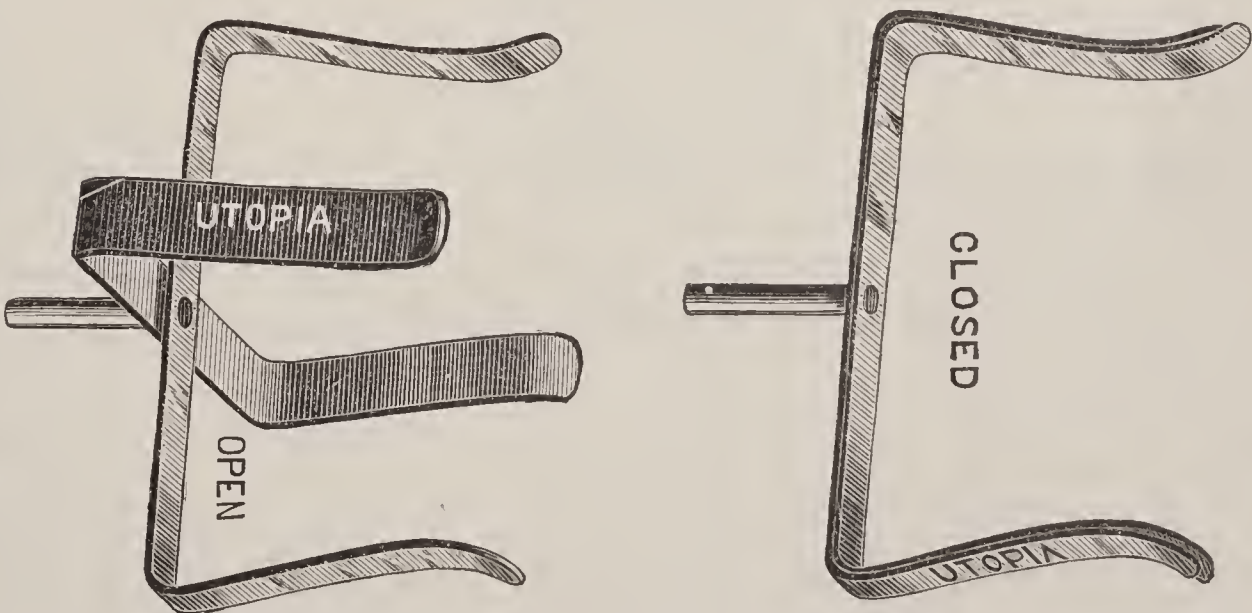
No. 61a. Draining Tube. A tube containing a blunt tapering rod. The rod, owing to its shape, facilitates the introduction of the tube into the femoral artery, after which the rod is withdrawn and the tube remains in the artery. It is used when it is intended to wash the arteries or to pump the blood out of the veins \$1 00



No. 114d.

No. 114d. Tube Holder. A short metallic tube, provided with a hook. The delivery tube of the pump passes through, and when the hook is attached, the holder keeps the arterial nozzle in a straight line with the artery, into which it is introduced..... 20

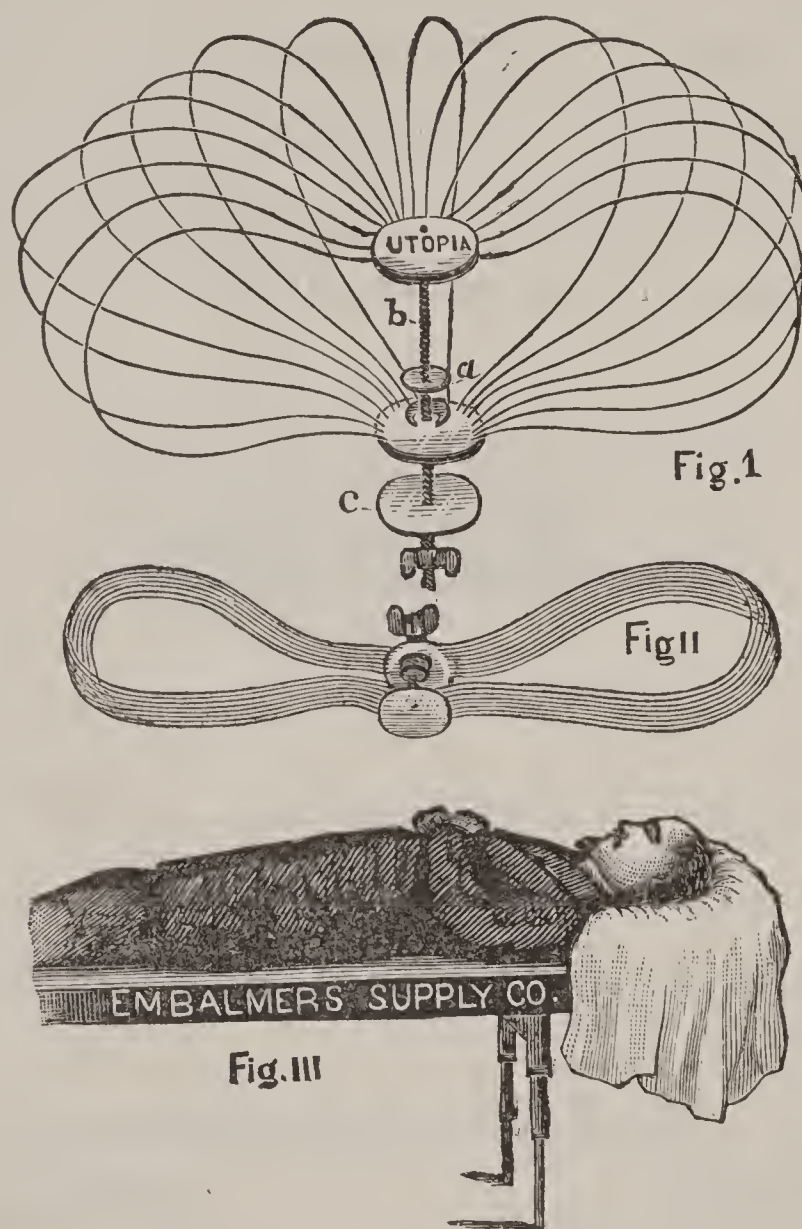
BOTTLE HOLDERS.



This unique contrivance is made of heavy spring brass, nickel-plated, and can be attached to any cooling board, by simply boring a hole in the board large enough to admit the stem ; or they will fit into the sliding rod of our **Arm Rest** (see page 71), and can be fastened therein by the thumb screw, at the end of the rod.

No. 238.	Bottle Holder,	for 2 quart square bottle.	.....	75 cents
No. 239.	“	“ 1 “ oblong “	.....	75 “
No. 240.	“	“ 1 “ square “	.....	75 “

No. 241. The Antiseptic Pillow is an improved device on which the head of a body rests while lying on the cooling board, and does away with the cruel-appearing small irons now used as head-rests. The head can be placed in any desirable position, and by placing a white cloth over the Pillow it gives the appearance as though the head was resting upon an ordinary cushion. It can be easily attached to any board and is far superior to the dangerous rubber pillows now in use. Price \$2 50



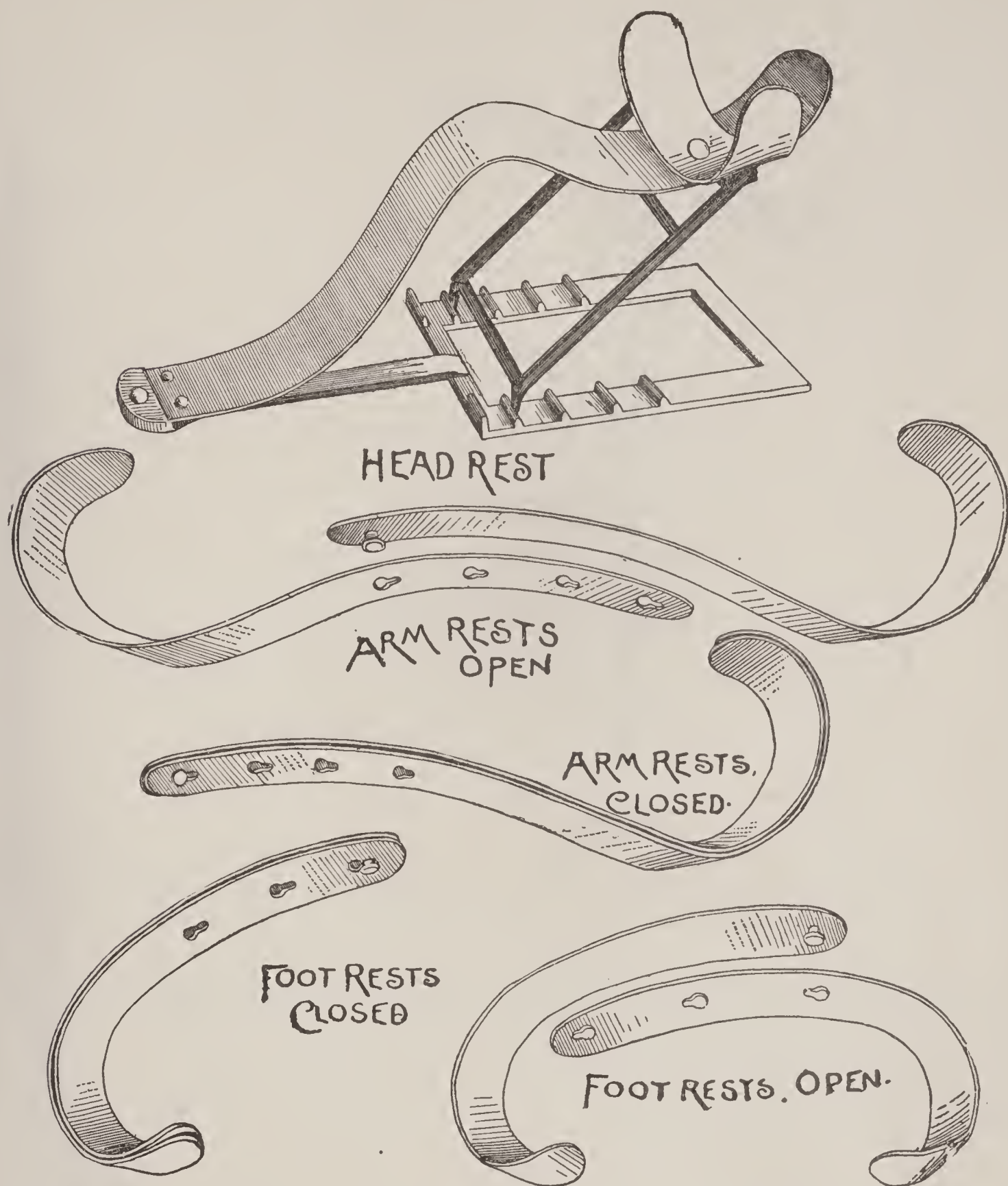
(Patented May 17, 1893.)

Figure 1 shows the Pillow open ready for use. "A" is a screw, which, when turned, will either raise or lower the wires. "B" is the rod on which the screw revolves. "C" is a plate which fastens the Pillow under the board by means of a thumb-screw. Figure 2 shows the Pillow folded so as to fit inside of the board. Figure 3 shows the Pillow when in use.



(Patent Applied for.)

No. 242. Antiseptic Arm Supporter, two sizes, each..... \$1 00



No. 243.	Head rest, large.....	\$2 50
No. 244.	“ “ small.....	2 00
No. 245.	Arm support.....	1 00
No. 246.	Foot support.....	90



No. 114 f.	Sleeve holders, per pair....	25
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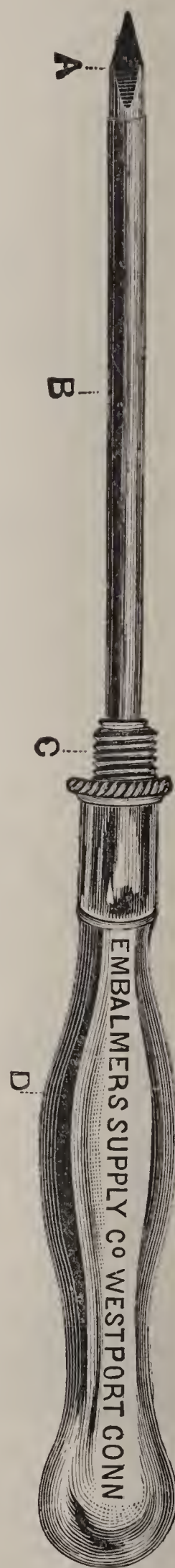
Every undertaker has experienced at various times the annoyance of the shirt sleeves slipping back while putting the outer garment on a dead person. The Sleeve-holder is a simple device by which the desired object is attained. The ring is passed round one of the fingers of the body, while the set spring grasps the sleeve firmly. The coat can then be slipped on in the usual manner, and the shirt sleeve held in position. Afterwards the spring is released and the sleeve-holder is taken out.



No. 247.

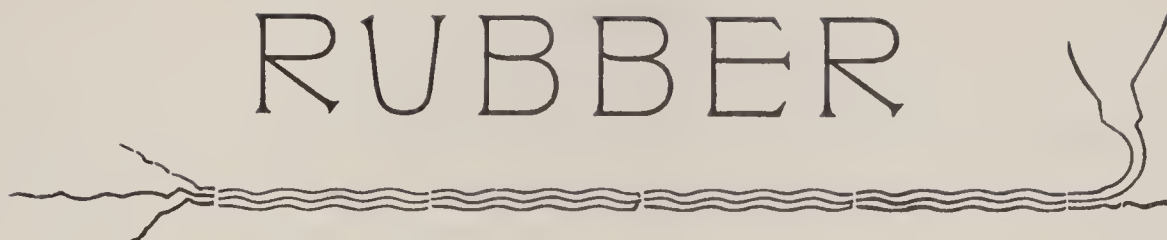
No. 247. **Metal Atomizer.** This Atomizer is not attacked and softened and rendered useless by the action of the liquids, and is without doubt the best Atomizer on the market. We guarantee them in every respect. Price, with white bulb..... \$0 65

No. 248. **Reversible Antiseptic Pocket Trocar (metal), \$1.50.** This Trocar is used for the same purpose as No. 46, which is described on page 65. "A" is the puncturing rod; "B" is the tube, which remains in the body and through which the liquids flow after the rod has been withdrawn. "C" is the thread which fastens and holds rod "A" when reversed and inserted in the hollow handle "D."

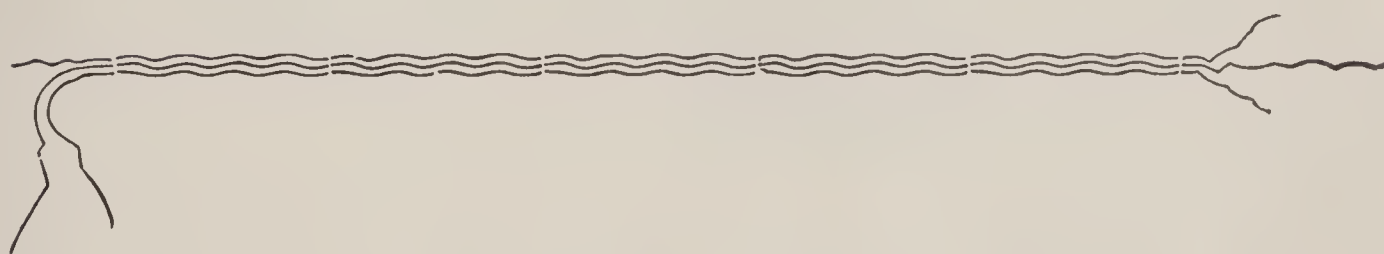


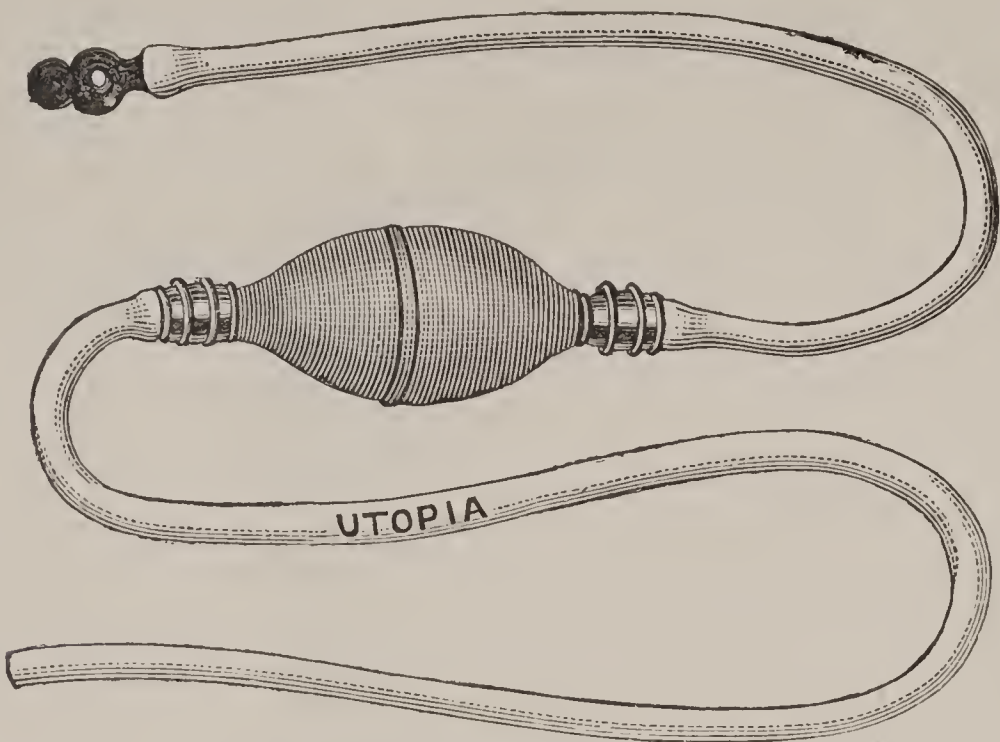
No. 248.

RUBBER



INSTRUMENTS.

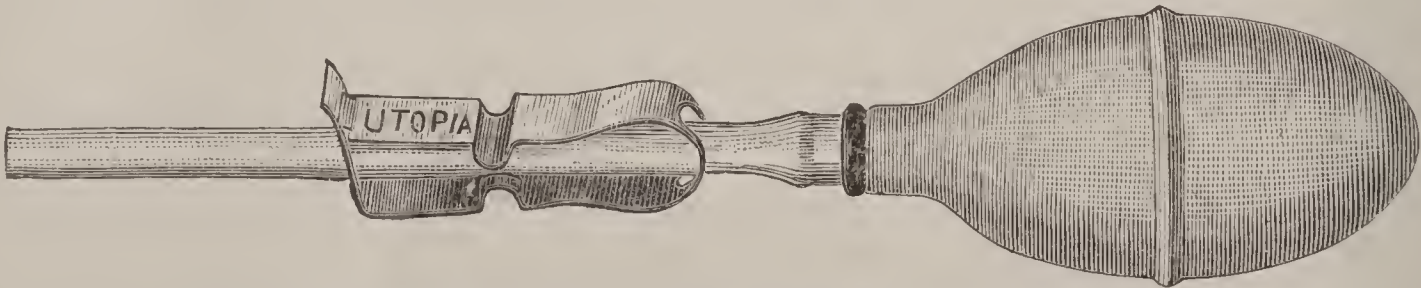




No. 64. BULB SYRINGE.

No. 64. The Bulb Syringe is too well known to be the subject of an exhaustive description. It is the oldest and simplest device for forcing fluid into the body, but imperfect in its action, as the valves become easily clogged, and also because when in a crippled condition it may admit air in place of fluid in the body. \$1 00

No. 249. Large Bulb Syringe. This syringe resembles the ordinary syringe of the same pattern, but the bulb is larger ; of stronger material, with tubing of extra size. Its great advantage consists in the size of the bulbs, which, containing more fluid, renders the work of the operator easier, in that the motion of the hand, in compressing the bulb, is necessarily slower, and the bulb being of stronger make, its expansion, in refilling itself, is more rapid..... \$2 00



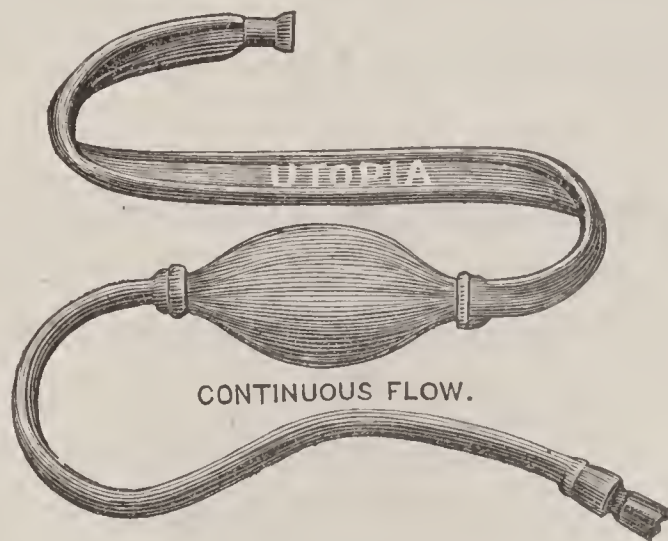
No. 140. THE HYPODERMIC BULB OR INJECTOR.

No. 140. The Hypodermic Bulb or Injector is provided with a cut-off, which permits of its being carried filled with the hypodermic solution at all times without danger of the contents escaping. It contains enough of the solution to be found sufficient in the majority of cases ; and can be used at a moment's notice, by adjusting the hypodermic needle in the elongated tube, and releasing the cut-off. The hypodermic solution being non-corrosive, does not attack the injector or destroy its elasticity.

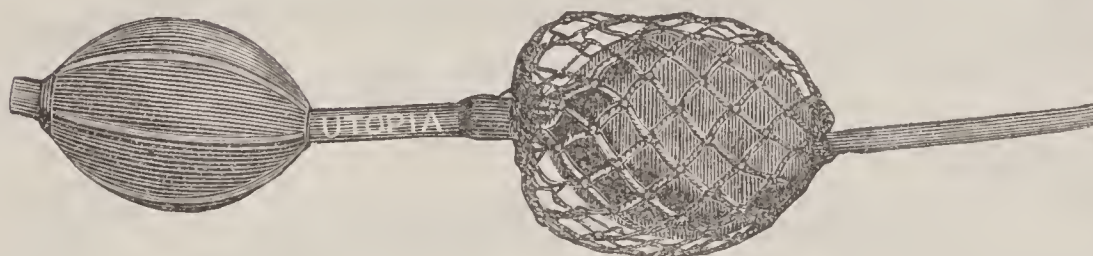
Price.....75 cents.

No. 65. Continuous Flow Syringe (Omega)..... \$2 00

See description No. 10, page 44.



No. 250. Continuous Flow Syringe (Alpha)..... \$1 50

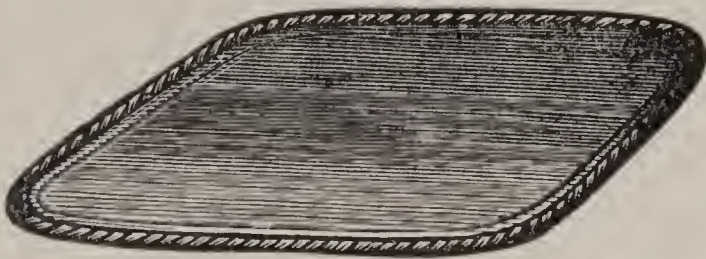


No. 251. Continuous Spray Atomizer Bulbs (no atomizer)..... \$2 00



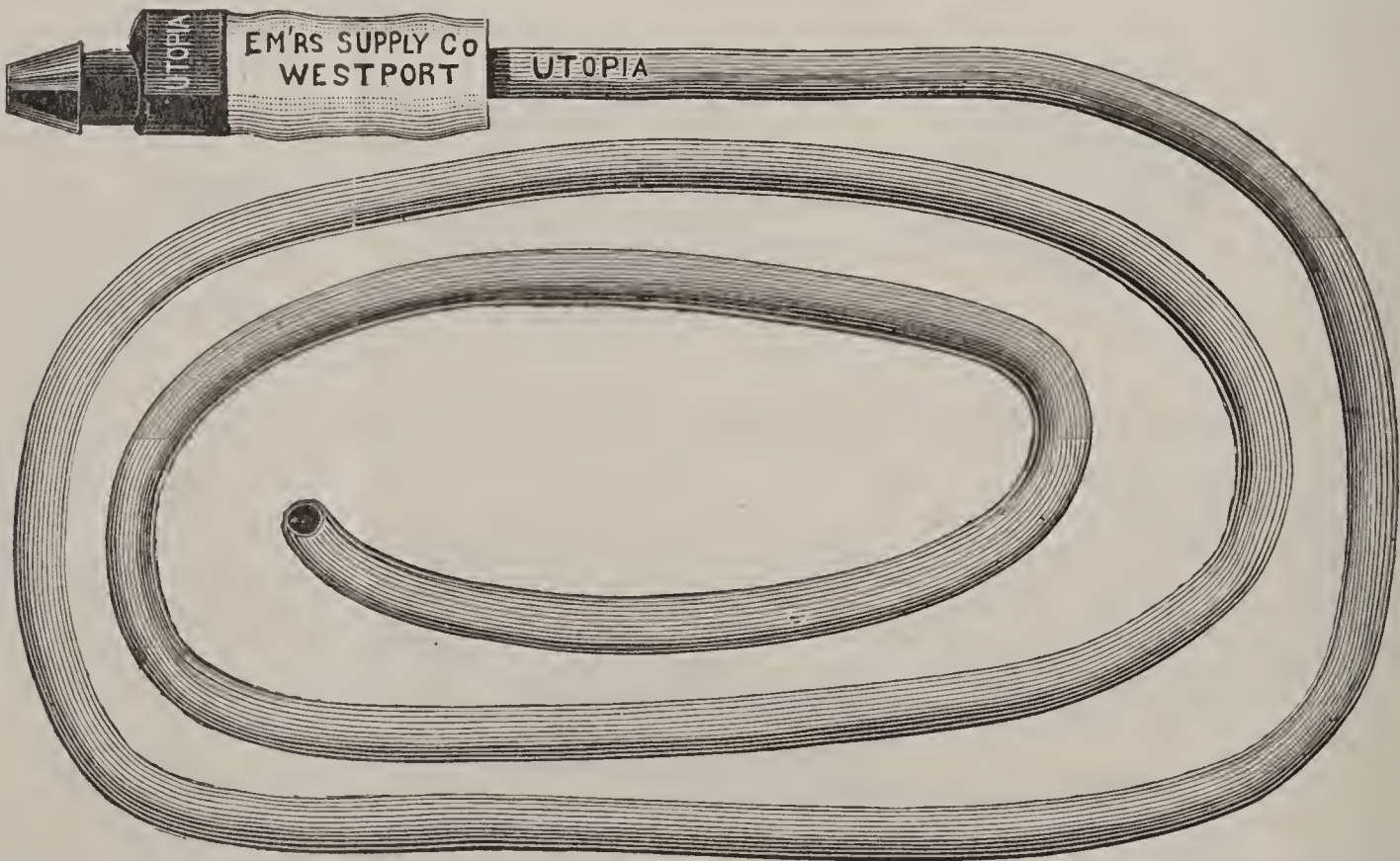
No. 252. Flexible Tube and Hose Connecting Link..... \$0 15

This is an excellent device for connecting firmly, and without risk of leakage, the Flexible Tubes, with the rubber hose of the Atmospheric Pump. As the Flexible Tubes have become so extensively employed for eliminating the blood from the body, it was deemed imperative to procure a coupling faultless in all respects. The Connecting Link will be found to meet all requirements.



No. 253. Carpet Protector, with rope edge..... \$4 50

No. 70a. **Silk Wrapped Flexible Tubes.**—These tubes are intended for insertion into either the basilic or femoral vein when it is necessary to pump blood out of the body. They are of French make, and possess advantages not found in those of English manufacture. They are more flexible and substantial than any, and their power of resistance to the action of cold, or the corrosive nature of embalming fluids, is unsurpassed, hence their durability is almost unlimited. They are provided with an attachment by which they are firmly held in the rubber hose, which is connected with an empty bottle, and into this the blood withdrawn from the body is received. Each..... \$1 35

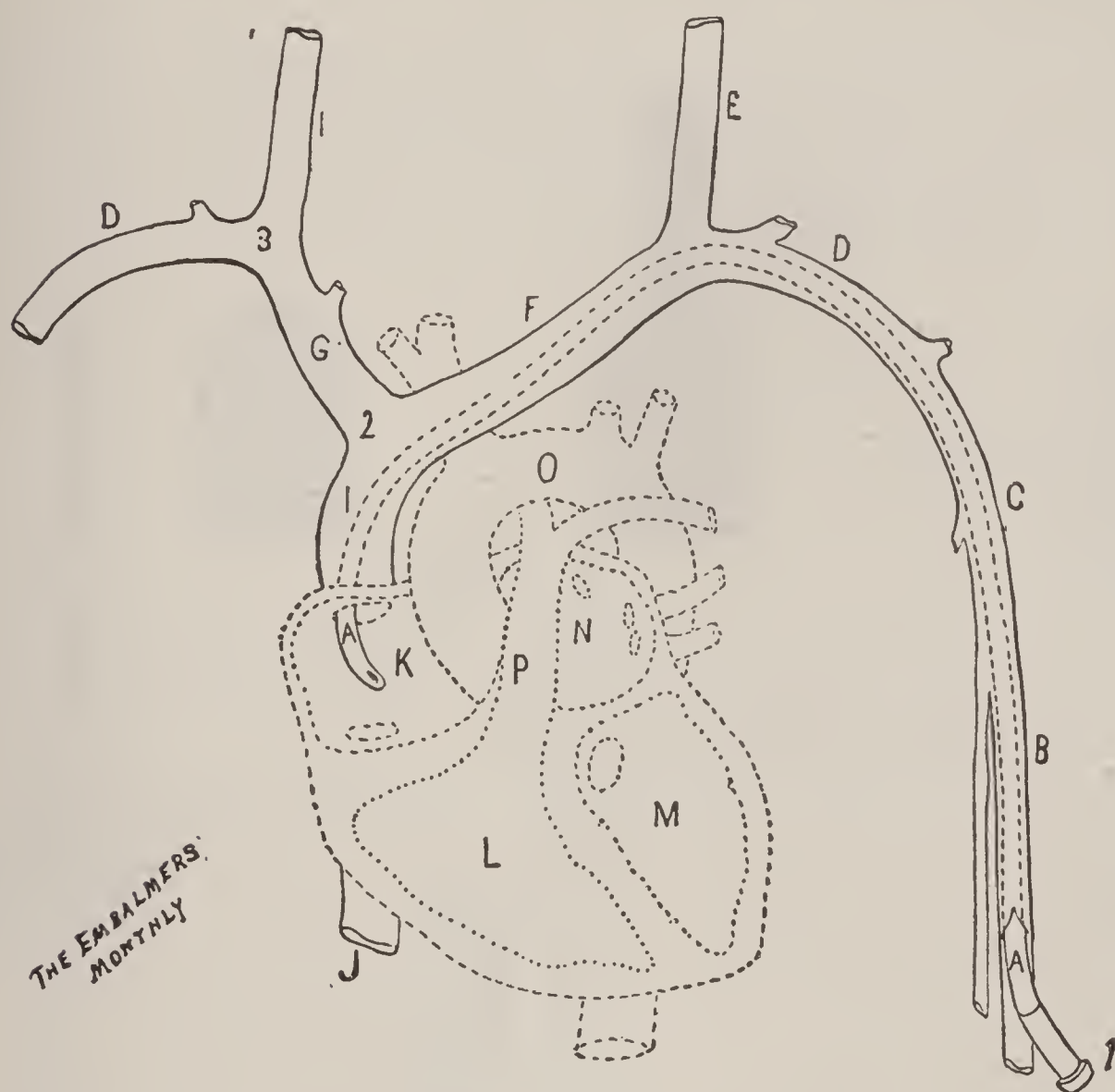


This mode of creating a vacuum in a bottle by means of the Atmospheric Pump, in order to withdraw the blood from the heart, by means of the Vena Cava, is that adopted by the United States College of Embalming, and recommends itself by its simplicity, effectiveness and the certainty of its success.

(See next page for method of using above.)

Method of Withdrawing Blood with a Flexible Silk Tube.

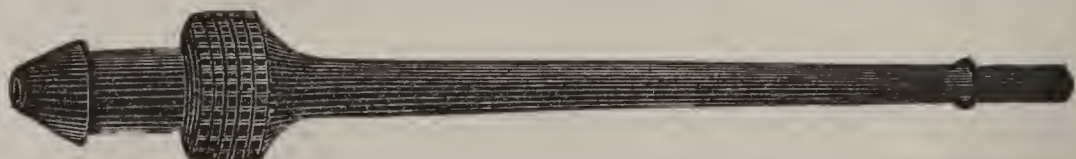
The flexible silk catheter (A), is introduced into the left basilic vein, the vein accompanying the brachial artery, passed upward through the axillary and subclavian veins and downward through the left innominate and superior vena cava veins into the right auricle of the heart. The aspirator is attached to the catheter at figure 1, and during the operation the catheter is worked slowly back and forth in order to bring the opening in its end at the junction of the right innominate (G), the left internal jugular



A Flexible Silk Catheter. B. Brachial Vein. C. Axillary Vein. D. Subclavian Vein. E. Left Internal Jugular Vein. F. Left Innominate Vein. G. Right Innominate Vein. H. Right Internal Jugular Vein. I. Superior Vena Cava Vein. J. Inferior Vena Cava Vein. K. Right Auricle. L. Right Ventricle. M. Left Ventricle. N. Left Auricle. O. Aorta. P. Pulmonary Artery.

(E), and other smaller veins. The desirable features of this method are that the blood is withdrawn directly from the head and neck, and that the centre of the venous system, the right auricle of the heart, is reached without any mutilation of the heart whatever.

After the catheter is withdrawn and the basilic vein securely tied above and below the incision, the venous circulation is left practically intact on account of the frequent anastomoses of the veins both above and below that point. The neatness of the operation is another point in its favor. With a little practice it can be performed without losing even a drop of blood. To accomplish this result it is necessary to raise the vein well up on the tip of the finger, make a quarter inch cut lengthwise of the vein with the point of the scissors or bistouri, directly over the tip of the finger; the pressure of the finger will hold the blood back until the catheter can be introduced. The object of operating on the left arm will be readily seen by examining the illustration. From the venous course from the left basilic vein to the right auricle of the heart is a gradual curve, while if the right basilic was used two acute angles would be encountered, one at the juncture of the right innominate, the right internal jugular and the right subclavian (see figure 3), and one at the juncture of the superior vena cava, the right innominate and left innominate (see figure 2). If the catheter becomes clogged, remove the same and force fluid through it to remove the obstruction.



No. 67. ARTERIAL NOZZLE.

No. 67. Arterial Nozzle, three sizes.....each \$0 25

No. 68. Nasal Tube, large and smalleach 75



No. 69.

No. 69. Open and Closed End Thimble, each 25

No. 70. English Catheter 15

No. 70A. Flexible (Silk) Draining Tube... 1 35



No. 71.

No. 71. Thimbles, soft rubber..... 05

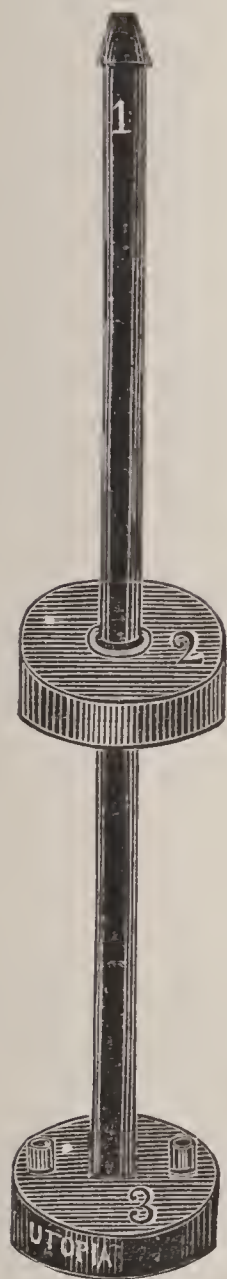
No. 70. FLEXIBLE CATHETER.

No. 68. NASAL TUBE.



No. 72.

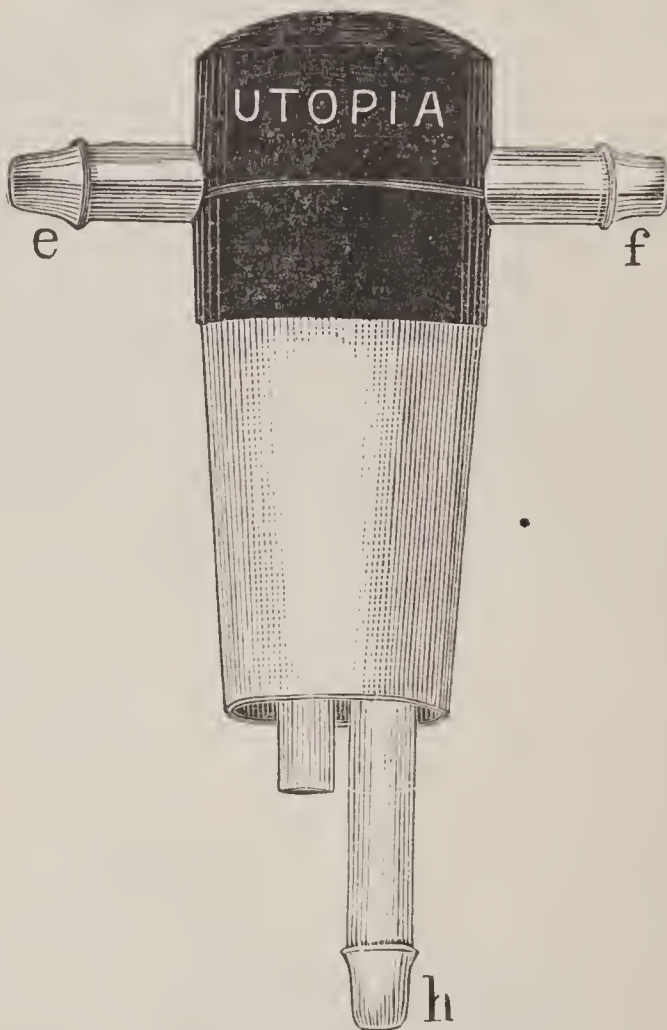
No. 72.	Cut-off	\$0 25
No. 72a.	Goose Neck for Atmospheric Pump	75
No. 254.	Air Cut-off, hard rubber	75
No. 255.	Arterial Nozzle, thimble connection, four sizes, each	25
No. 256.	Goose Neck for Atmospheric Pump, Aluminum	2 00



No. 254.



No. 255.



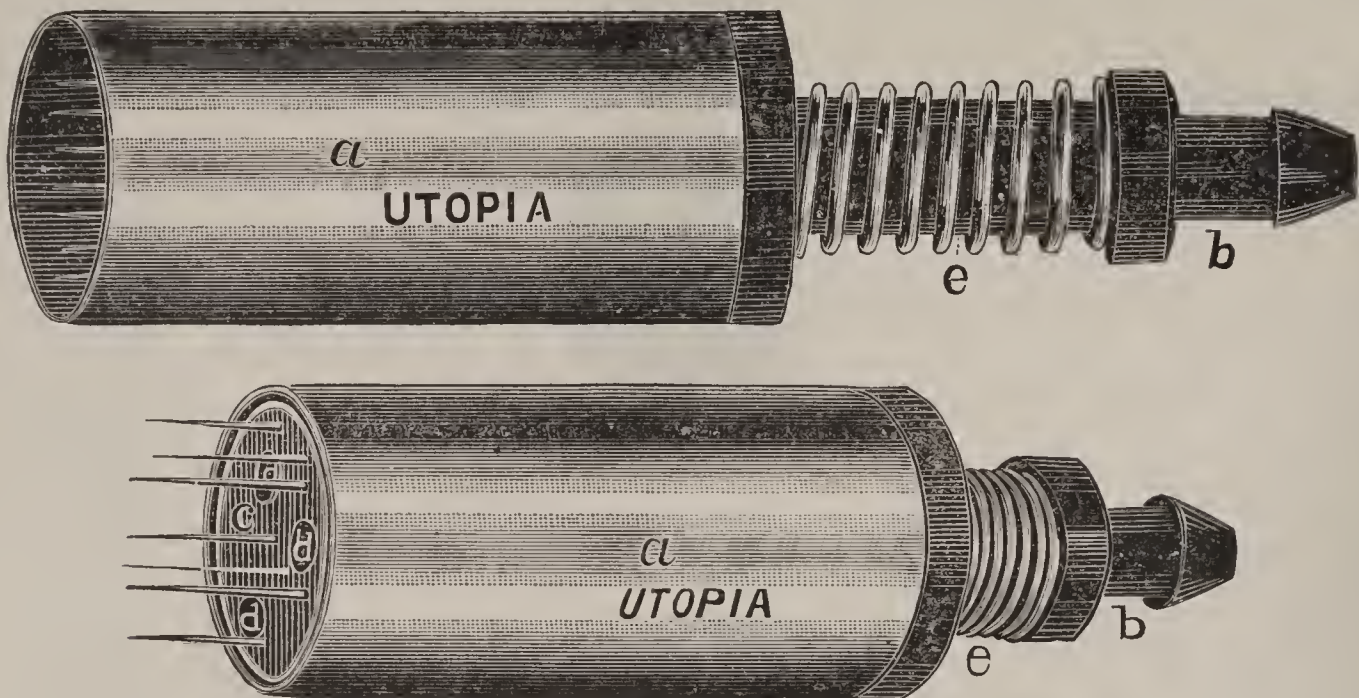
No. 256.

(For description see page 52.)

No. 257.	Inflating Bulb for Dolge Injector	\$2 50
No. 258.	Hand Bulb for Dolge Injector	75

The thimbles are intended to close the arterial nozzle and prevent the fluid from escaping out of the arteries, when the first injection is not deemed sufficient and a second injection is required after a certain lapse of time. The catheter is also used at times, when it is necessary to empty the bladder or to inject the throat.

The Air Cut-Off, Inflating Bulb and Hand Bulb are used in connection with the Dolge Injector. See page 46.



No. 259. Suction Leecher \$2 25

(Patent applied for.)

The Suction Leecher is so constructed that its utility may be considered as two-fold. The instruments are used to puncture the skin in dropsy, wherever the accumulation of water is most noticeable, to allow the escape of the liquid contained in the tissues. This was the utmost that could be accomplished with the leecher formerly in use, but in this instance and with the suction leecher a far more complete elimination of the liquid is obtained. After the skin has been punctured the flow of water is immediately assisted and the water exhausted by the aspirator connected with the stem (b) of the instrument. Discoloration is also removed instantly from the ears by puncturing the under side of the lobe, thus concealing all marks and the blood removed by the same process.



A WORD TO THE CARELESS.

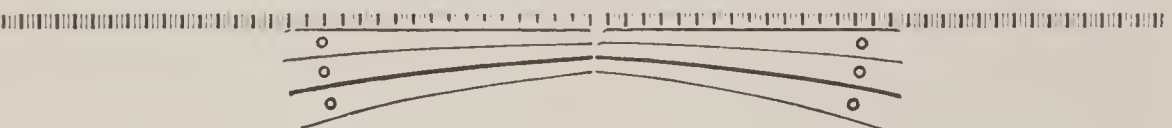
“Cleanliness is next to godliness” is an old adage, but, nevertheless, a true one, and its signification should be carried out by no one more than the funeral director, who comes daily in contact with every conceivable form of diseased bodies and polluted surroundings. The embalming instruments and other paraphernalia should be kept just as clean as possible, and care taken to see that none, after they have been used, are laid in a position liable to leave traces of putrid or infected matter behind them. In extreme cases, instruments employed should be thoroughly rinsed in hot water and carefully dried before leaving the house of infection. The adoption of this method is a safeguard not only to the embalmer himself, but it also would prevent serious results to members of his family, should they in some manner come in contact with them.

The undertakers should strive to elevate their profession on a level with the medical fraternity, and nothing will tend more to do this than to keep their implements in a presentable condition. “A good mechanic is known by his tools,” and a good embalmer should be judged likewise.

How to take care of instruments is told on page 32 of this Catalogue.



SUNDRIES.

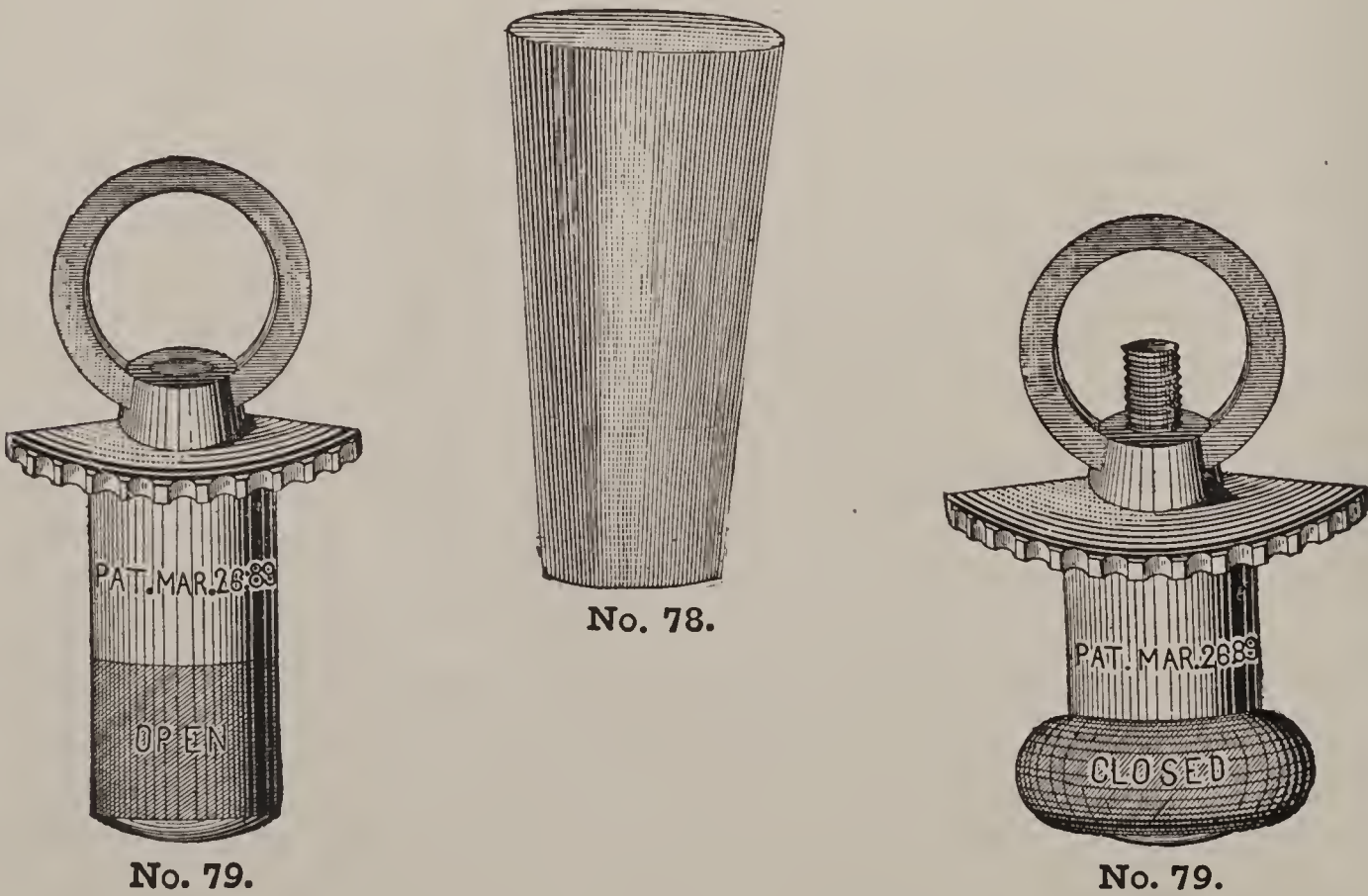


RUBBER SHEETING.

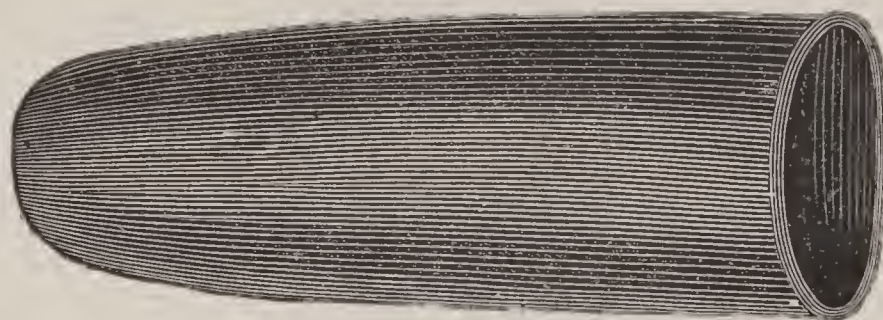
The white rubber sheeting is intended to preserve the cooling board when embalming and washing a body. It is laid on the cooling board before the body is placed on it, so that water or other liquids may not stain the board. It is withdrawn when the operation is completed. The black rubber sheeting is spread under the cooling board to prevent soiling the floor of the room while the process of laying out, washing and embalming the body is being carried on.

No. 73.	Rubber Sheeting, 54 inches wide.....	per yard, \$1 25
No. 74.	Rubber Tubing ($\frac{5}{16}$ of an inch thick)	per foot, 12½
No. 75.	“ Gloves.....	1 50
No. 76.	“ Gauntlets	2 00
No. 77.	“ Surgeons' Gauntlets (pure rubber).....	2 75
No. 78.	Rubber Stoppers, plain.....	each, 5
No. 79.	Rubber Stoppers, patent.....	20
No. 80.	Rubber Finger Cots.....	each, 10
No. 81.	Rubber Bib (or Dam).....	1 50

No 75. The Gloves and Gauntlets are for the protection of the hands when holding an autopsy or when handling the remains of a person who may have died from the effect of some venereal disease.

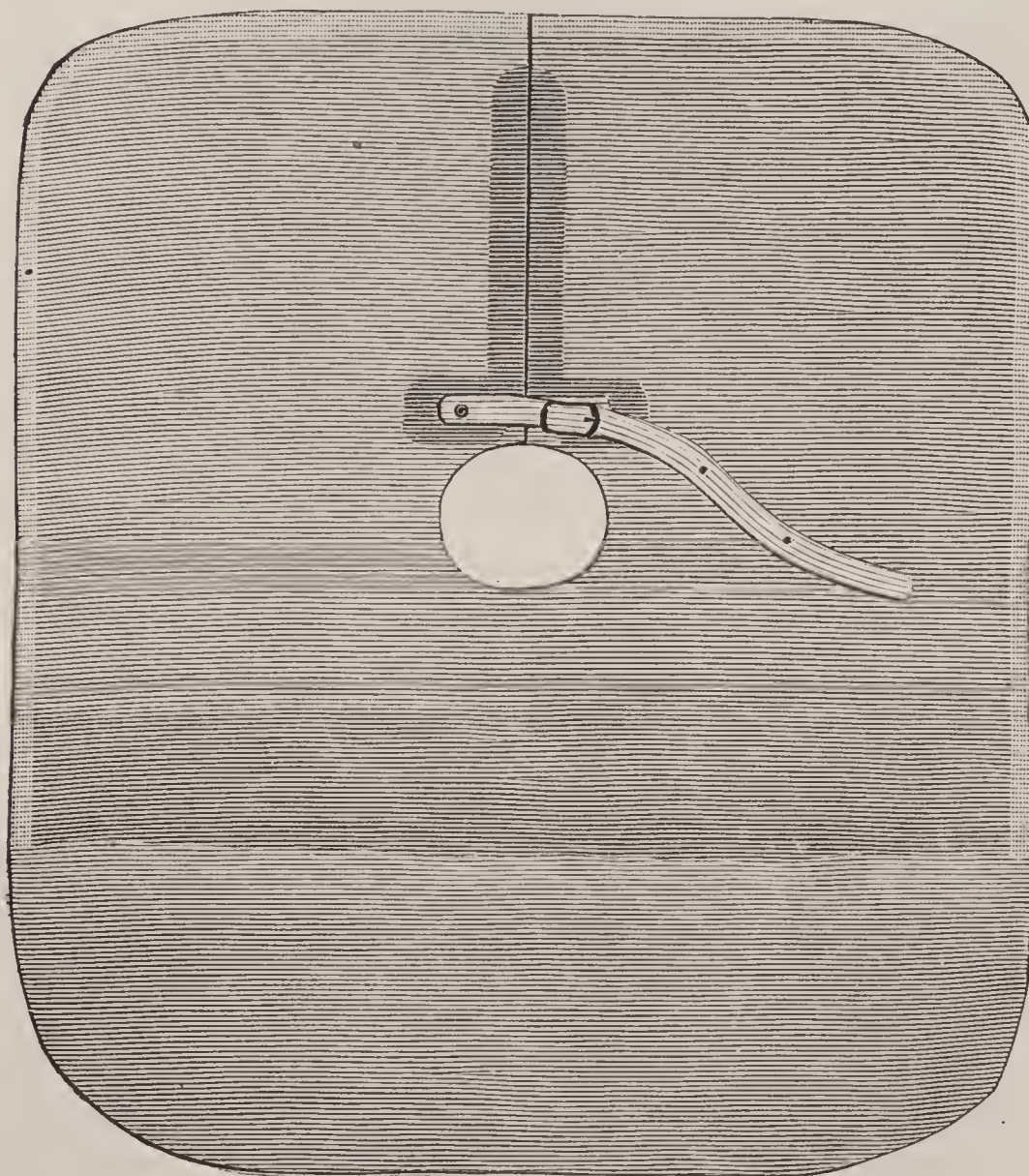


No. 79. The Patent Stopper is so contrived that by means of a screw the rubber band is expanded, and the stopper is made to fit tightly in the neck of the bottle, so that bottles may be safely carried horizontally without danger of their contents escaping.



No. 80.

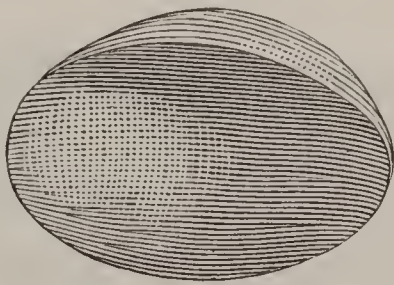
No. 80. The Finger Cots are intended to protect the fingers where an abrasion of the skin or cut might expose the operation to the dangers of blood poisoning.



No. 81.

No. 81. The Bib or Dam is a rubber sack provided with strap and buckle to fasten on any part of the body where an artery is being injected. All liquids or blood escaping from the wound are collected into it, thus obviating the risk of soiling surrounding objects.

EYE CAPS.



No. 86.

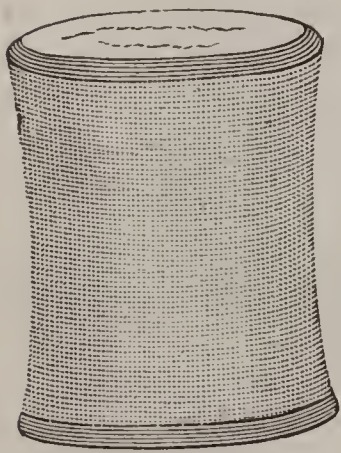
No. 86. Eye Caps. They are thin wax shells, covered with muslin. They are concave on one side and convex on the other. They are intended to preserve the natural rotundity of the eye by keeping the lids in their place, after the globe of the eye has become flaccid and sunken in the orbit.

To use them introduce one-half of the cap under the lower eyelid, and afterwards pull the lid up over the cap, then pass the cap under the upper eyelid; bring it down over the cap, so as to cover the lower lid partly if possible.

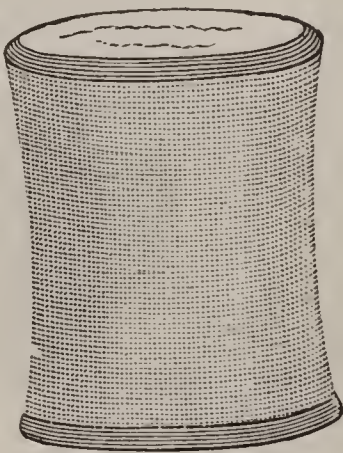
These caps will be found most useful at all times, but especially when it is intended to ship the remains to some distant point. The eye caps can easily be trimmed down to fit the size of the eye in children. Per dozen 75



SURGEONS' SILK.



No. 87. WHITE.



No. 87. BLUE.

No. 87. Surgeons' Silk, white and blue	per spool, \$0 15
No. 88. Force Pump Holder (cast iron Japanned)	25
No. 234. Surgeons' Strong Linen Thread, 200 yard spool	25

No. 66.	Embalming Needle, hard rubber	\$0 25
No. 260.	Finger Cots, 5 sizes, pure gum rubber, each.....	10
No. 92.	The Patent Razor Brace is a holder intended to clasp the blade of a common razor firmly. Price.....	35
No. 93.	Cabinet Covers (canvas).....	1 00
No. 94.	Wade & Butcher Razor.....	1 00
No. 95.	Razor Strop.....	20
No. 96.	Shaving Brush.....	15
No. 97.	Hair Brush.....	35
No. 98.	Shaving Cup.....	15
No. 99.	Comb.....	10



No. 165. Lintine.—This article is an excellent substitute for Absorbent Cotton in all cases where that substance is needed. Being in separated sheets, *Lintine* is not subject to waste, as Absorbent Cotton ; its folds are easily detached, are of the proper thickness, and more easily handled than the cotton. *Lintine* is indispensable to absorb the water from the limbs, after puncturing with the leecher and before compressing with bandages. *Lintine* also possesses a precious advantage over Absorbent Cotton, and this will be readily appreciated by all undertakers. The sheets of *Lintine* can be easily cut in a neat manner of the required size and shape ; also being glazed on both sides and of an even thickness, it will, when applied on the face, and saturated with the Face Wash (No. 139), be found to accommodate itself by a slight pressure of the fingers, to the form of the features, so that every part, hollow or prominent, will come equally in contact with the fluid, and after removal will leave the face of a uniform color. *Lintine* is also cleaner in its employ than Absorbent Cotton, as it is not as liable to attach itself, either to the clothing or the hands. Price, one pound packages

75

We are sole agents for “*Lintine*.”

ABSORBENT COTTON.

It is used chiefly to fill up the wound where an artery has been raised, perhaps in a careless manner, and absorb the temporary leakage of some smaller branch after the operation is finished, and before sewing up the skin. It is also used in cases of dropsy under the bandages which surround the legs, to absorb the water escaping out through the punctures made by the leecher. It may also be successfully used in padding the sunken cheeks of persons whose remains, after a sickness of long duration, present an unnatural appearance. For a cover of the face it is far superior to cloth on account of its lightness.

No. 105.	Absorbent Cotton.....	Half pound, 40c., One pound, \$0 75	
No. 106.	Wooden Faucet, with metal key, leather lined, is, and remains tight fitting, thereby preventing leakage.....		40
No. 114e.	Sponge Bags, rubber, 4 sizes.....	50c, 35c, 30c,	25
No. 114f.	Sleeve-holders, per pair.....		25
No. 114g.	Carpet Protectors, black rubber, 54x108 ..		3 00
No. 253.	Carpet Protector, black rubber, rope edge.....		4 50
No. 275.	Undertakers' Soap, a purely vegetable antiseptic, germicide and deodorizer. Per box, containing 6 cakes.....		1 50

When ordering any article from this Catalogue please state the number as well as name ; this will prevent any possible misunderstanding as to exact article desired.

We are thoroughly equipped to make instruments of any special design and guarantee perfect satisfaction as to workmanship and quality of material used. Nickel-plating and repairing executed in best manner at a moderate cost.

If you do not find what you desire in this Catalogue, write us full particulars and we will endeavor to supply your wishes.

BANDAGES.

No. 169. Linen Finish Bandage. Price, per dozen rolls..... \$1 00

No. 170. English Open Bandage. Price, per dozen rolls..... 1 00

The Linen Finish Bandage, 3 inches wide, and the English Open Bandage, of the same width, are used for fixing and tightening the *Lintine* round the limbs, in dropsy, or on other parts of the body, where the leecher has been employed to allow a free escape of dropsical liquid, or of serous fluids.

No. 171. Bi-Chloride of Mercury Gauze—3 inches wide, is a powerfully antiseptic dressing, used in bandaging cancerous, festering and gangrenous sores, ulcers, etc.

MANNER OF USING.

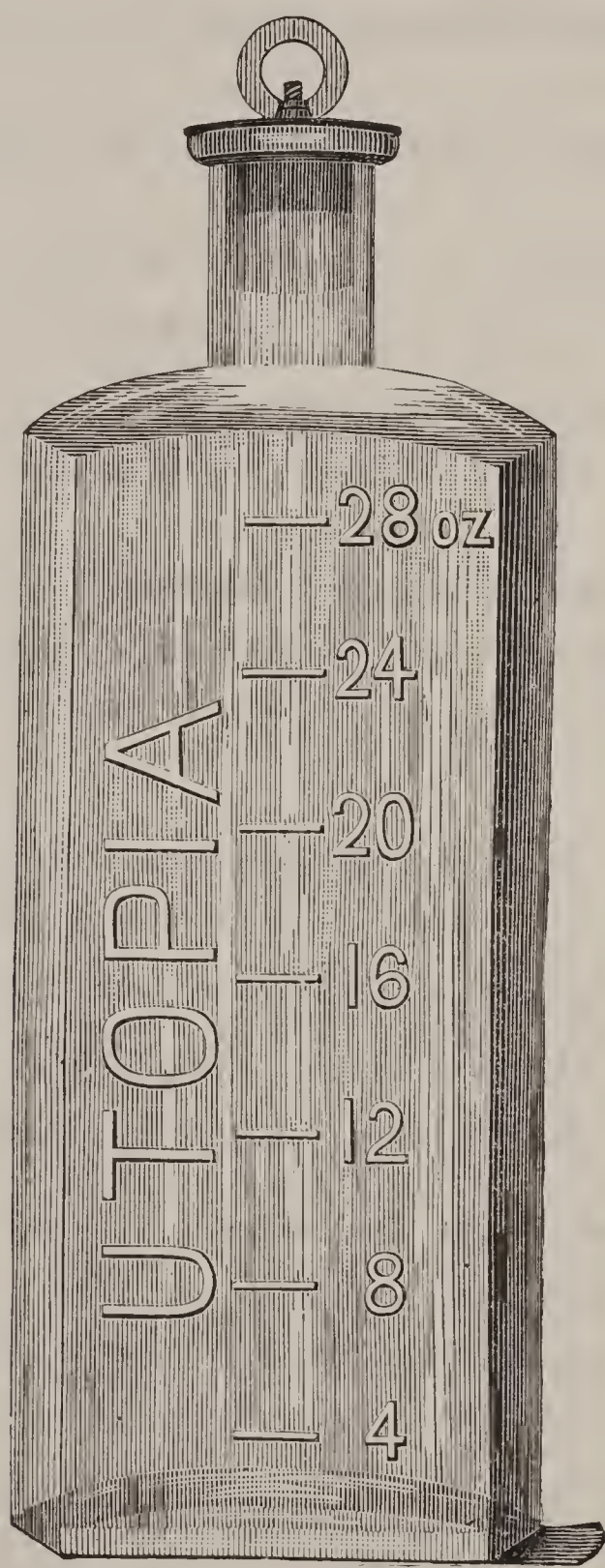
Bandage the affected part with two or three layers of the Bi-Chloride Gauze; place a sheet of **Lintine** over it, and hold in position with a dressing of the English Open Bandage. Price, per dozen rolls \$1 50

No. 172. Plaster of Paris Bandage—3 inches wide, is an elegant substitute for the plaster itself in cases where its use is required: to hold broken limbs in their proper position.

MANNER OF USING.

Saturate about one foot of the bandage in water and apply to the limb, about six inches above the fracture, then bandage tightly downwards, allowing each layer to overlap the preceding one, an inch and a half, continuing in this way until a point six inches below the fracture has been reached; moisten the dressing with a sponge and allow it to dry. This operation may be repeated until the proper stiffness has been attained.
Price, per dozen rolls... \$2 00

UTOPIA GRADUATED BOTTLES.

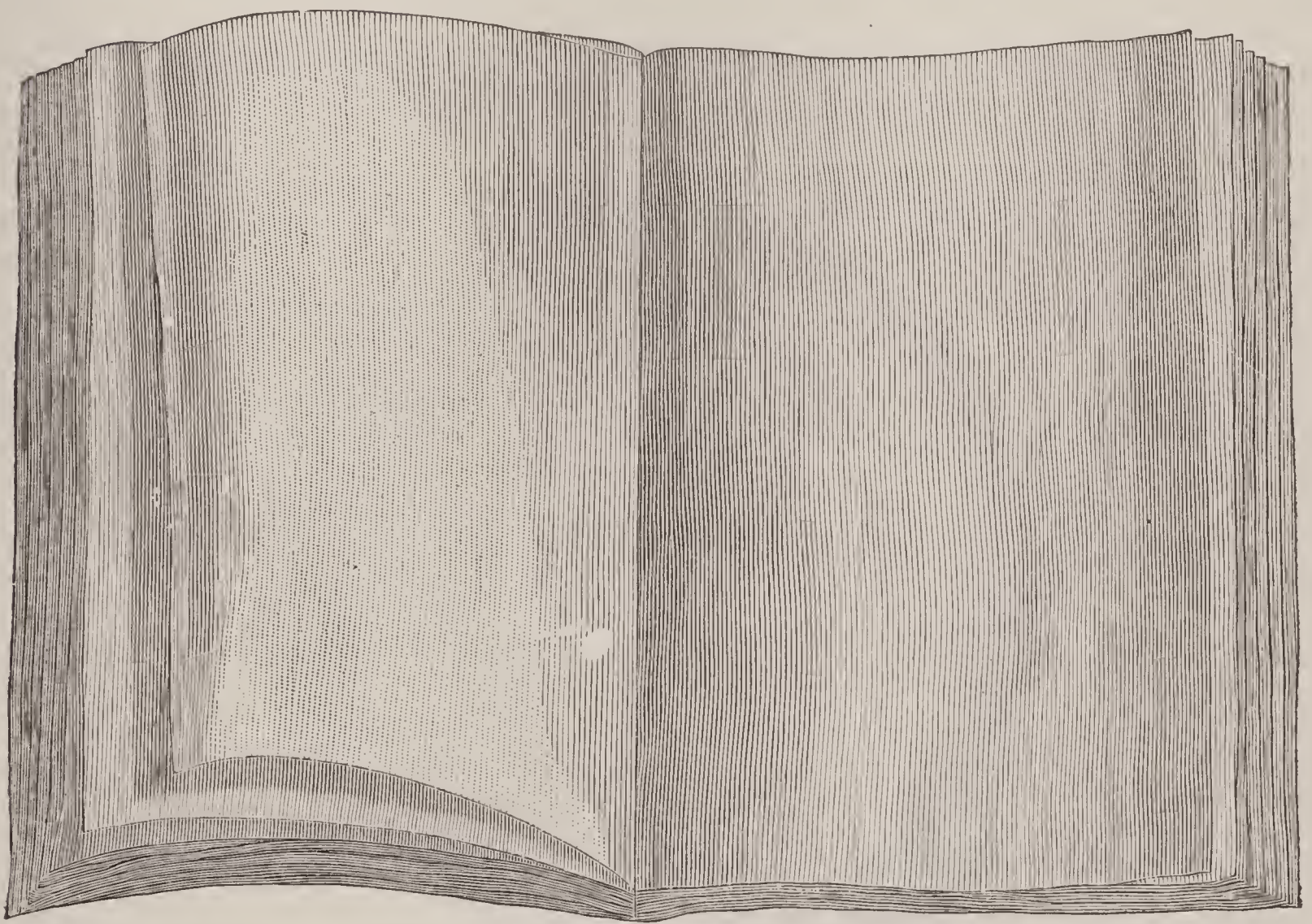


They are made of thick glass, capable of resisting a very strong pressure. They are provided on one side with a graduated scale, allowing the operator to form a correct estimate of the amount of fluid injected in the different parts of the body.

No. 101. One-quart Bottle, Graduated, extra heavy, without stopper.....	\$0 30
No. 103. One-half gallon Bottle, Graduated, extra heavy, without stopper...	45
No. 104. Sponge	10

SOAP SHEETS.

No. 114. Far superior to any kind of soap, for washing the hands after embalming a body ; the sheets are either carbolated or highly perfumed. They are put up in the shape of a small book, which can be carried conveniently in the professional or in the cabinet. The sheets are easily detached from the book when needed for use.



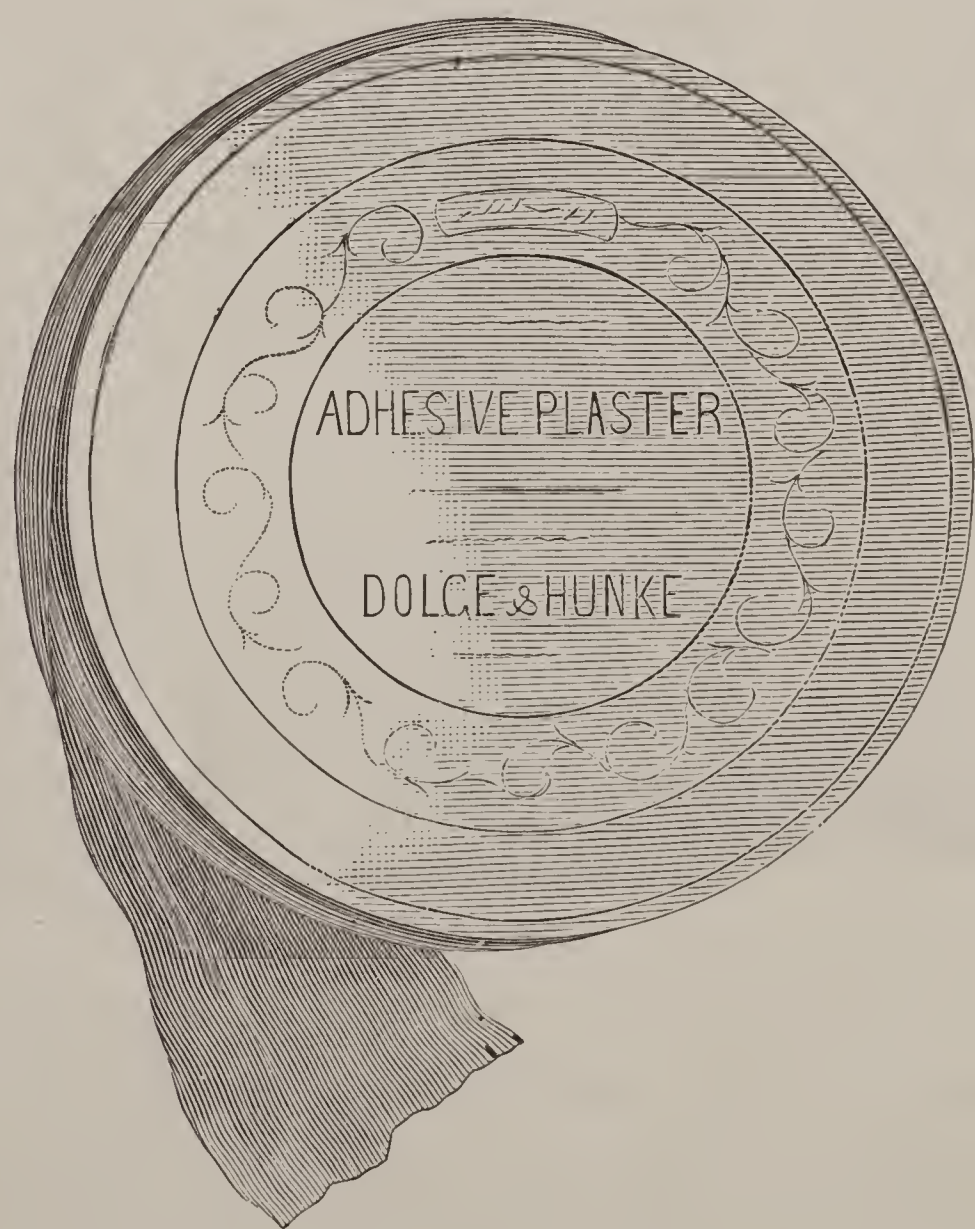
No. 114.

Price, per dozen	\$1 50
“ per book	15

ADHESIVE PLASTER.

No. 114a. A strongly adhesive plaster used by many for closing the wound made by the raising of an artery. It is also successfully applied in the same instance for concealing the sewing of the wound. To apply it, cut the plaster of the desired length and size, warm it gently by a stove or a gas jet and apply it with firm pressure upon the part.

10 yard roll, 2 inches wide.....75 cents.



No. 114a. ADHESIVE PLASTER.

ATLAS OF HUMAN BODY.

With Explanatory Key on Inside Cover.

(No. 82.)

Composed of Movable Plates,

SO ARRANGED AS TO SHOW SUCCESSIVELY THE DIFFERENT ORGANS OF THE
BODY, THEIR POSITION, AND CONNECTIONS WITH ONE ANOTHER.

FOR ACCURACY OF DESIGN

AND FAITHFULNESS OF THE PRESENTATION OF THE VARIOUS PARTS,

The Atlas is Equal to any Anatomical Work Published

AND SHOULD BE IN THE HANDS OF ALL FUNERAL DIRECTORS AND EMBALMERS.

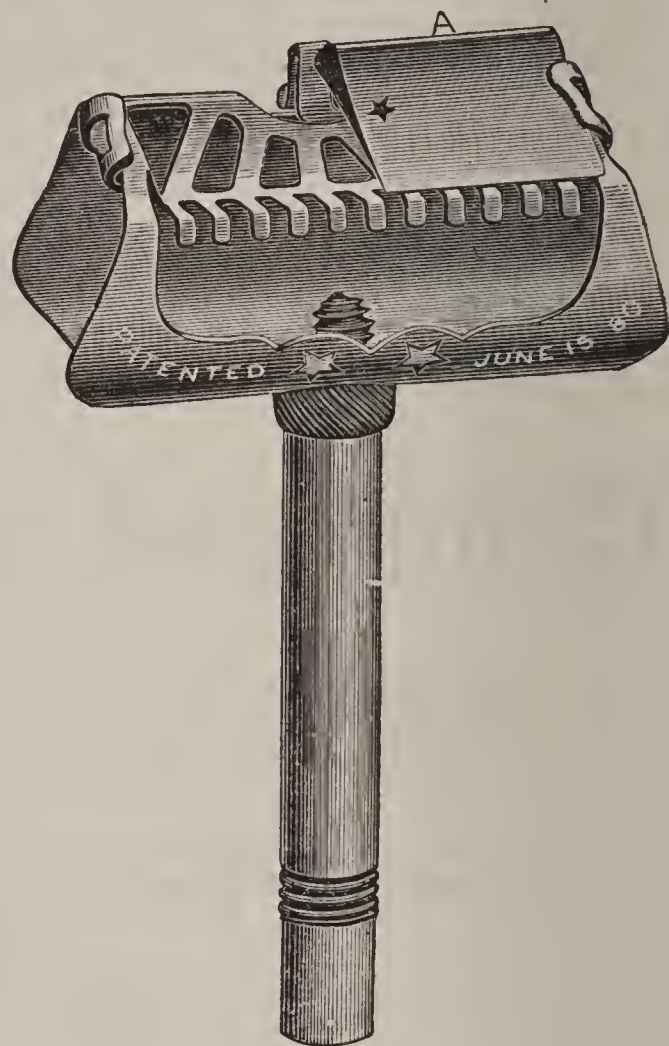
PRICE, \$3.50.

National Text Book.

A COMPENDIUM OF VALUABLE INFORMATION FOR EMBALMERS. THIS WORK CONTAINS
MANY ESSAYS AND SELECTIONS FROM THE UNDERTAKERS' MANUAL,
WRITTEN BY A. RENOARD, NOW THE DEMONSTRATOR IN THE
UNITED STATES COLLEGE OF EMBALMING; AND HAS
NO EQUAL AS A BOOK OF REFERENCE.

PRICE, = = = = = \$5.00

THE STAR SAFETY RAZOR.



No. 84.

Highest Medal Awarded at the American Institute Fair, New York, 1884-5.

A Great Invention, which Renders Shaving an Easy and Convenient
Luxury, and Obviates all Danger of Cutting the Face.

WARRANTED TO SHAVE CLEAN.

TIME AND MONEY SAVED.

DELAYS IN BARBER SHOPS AVOIDED.

It is specially adapted to the aged and the young; and is indispensable to travelers by land and by sea; to miners and persons camping out; to the indolent and luxurious; to the man who wants a quick shave, and him whose skin is too tender to admit of the application of the ordinary razor.

ONCE USED, YOU WILL NEVER BE WITHOUT IT.

DIRECTIONS.

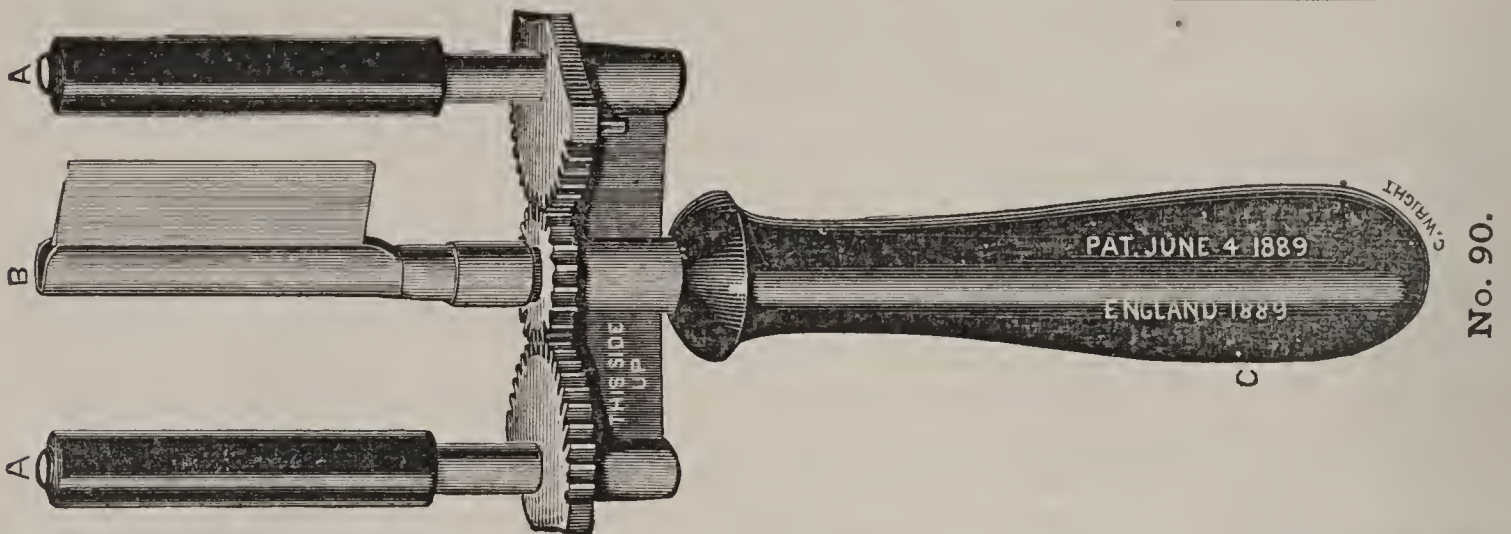
To protect it from accident and rust, the STAR SAFETY RAZOR should be handled with the same care as any other razor. To secure an easy shave, lather the face well; apply the Safety Razor at the same angle as the old style of razor, and draw it across the face with a firm stroke. The Star Safety Razor shaves as close as may be desired, and gives a pleasant sensation. After shaving, cleanse the frame and blade, which may readily be done by shaking in water or holding under running water; then remove blade from frame and wipe them both thoroughly dry; take the blade, insert it in the holder provided for the purpose, and strop as usual; return the blade to the frame, keeping the Star side up, and the instrument is ready for use.

No 84.	Patent Star (or Safety Razor).....	\$2 00
No 85.	“ “ “ “ Blade	1 00
No 90.	“ “ Razor Stropping Machine.....	2 50
No 91.	“ “ “ Strop.....	50

I have used the Star Razor since 1880 and have found it a great comfort in my travels in Europe, as less care is needed in shaving. It takes half the time than with an old style razor. I have one in *continuous* use for 5 years, and it is perfect yet. A stropping machine should be used when sharpening the blade.

C. B. DOLGE,
WESTPORT, CONN.

Star Safety Razor Stropping Machine.



Read the following explanation, also see annexed cut, which, we believe, will show better than words the wonders of this astonishing machine :

The blade is placed into the central blade holder between the two friction rollers, and the device placed upon the strop in such a manner that the blade and rollers rest on said strop, keeping the side marked up, as shown on the device.

The machine is moved forward and back over the strop, and every time it is reversed the blade is automatically turned on its back and a fresh face or side presented to the strop.

It is absolutely impossible to turn one of our razor blades held in the above device on its edge, and thus the blade cannot be dulled, damaged or injured.

No machine or device yet made outside this one forcibly brings the blade in contact with the strop and holds it at the proper angle. The strokes may be short or long, and may be made as rapidly or slowly as may be desired.

The blade is stropped perfectly and provided with a sharp edge in a marvelously short time. The machine to work properly and lightly should be oiled occasionally.

We would recommend our flexible linen canvas strop, which will work like a charm with this machine. These strops if rubbed slightly with soap of any kind to produce the necessary friction, will keep our blades in magnificent keen cutting order.

No. 90. Patent Star Razor Stropping Machine. Price \$2 50

THE STAR SAFETY RAZOR SWING STROP.



No. 91.

They are especially prepared, highly polished, made of the best Arbroath Linen Duck, are much finer and even better than Russia Leather, and being more flexible, touch every part of the edge equally, giving it a keen, smooth and lasting finish.

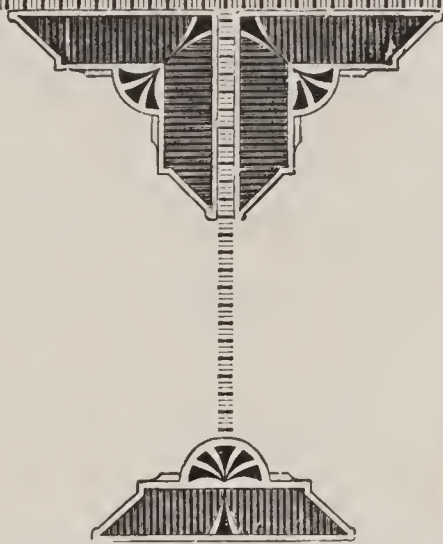
Price \$0 50



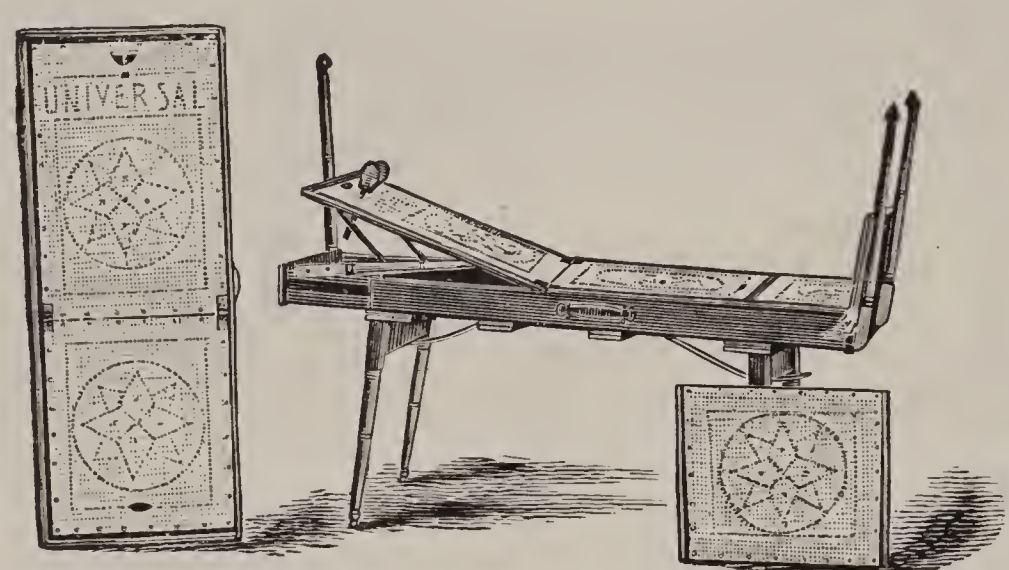
Embalming

OR

Cooling Boards.



The Universal Extension Board.



No. 115.

Patented May 12, 1891.

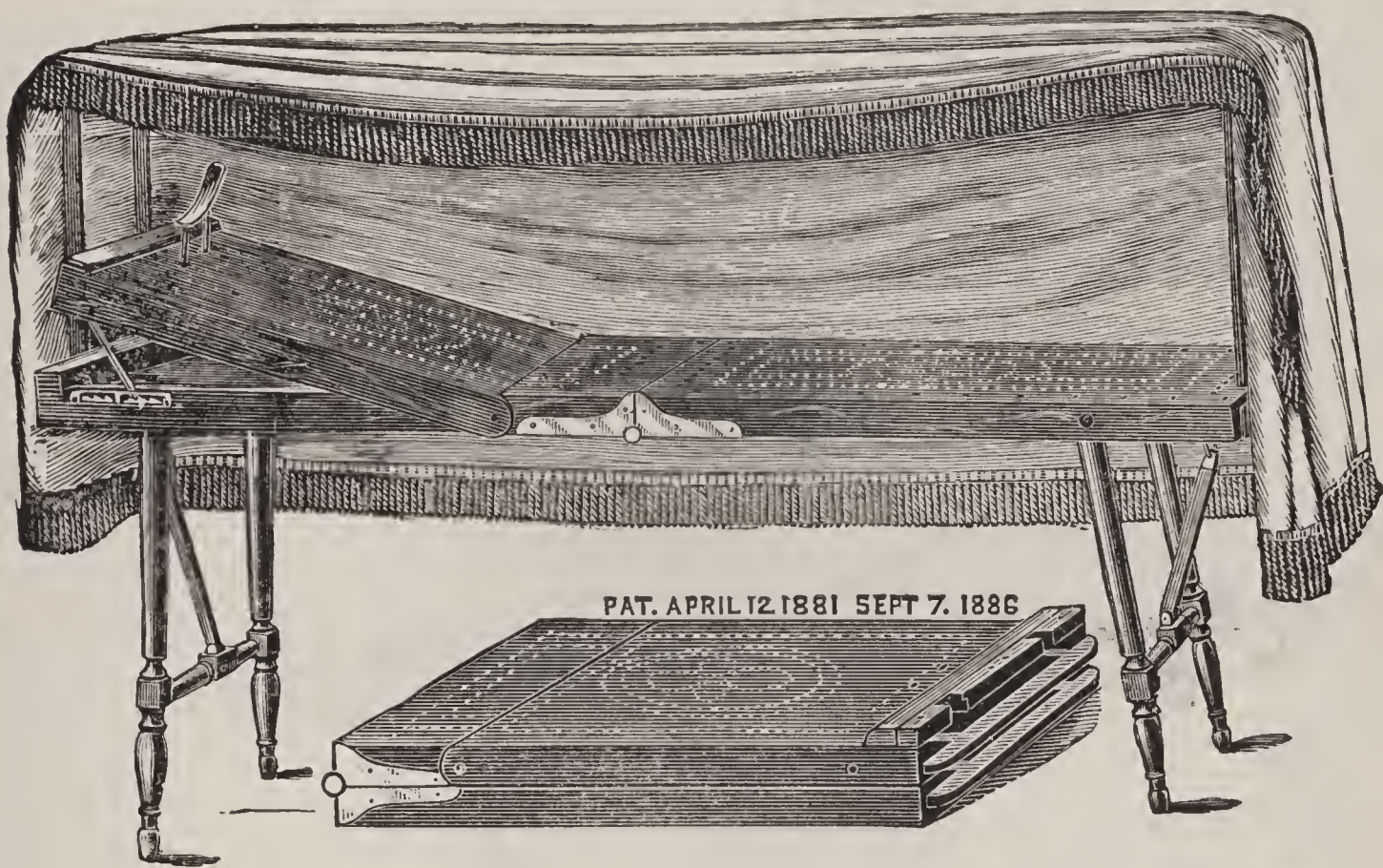
The Cooling Board as shown in above illustration is constructed on the same principle as an extension table with adjustable leaves, which do not increase the weight of the board, and which can be folded inside the board when not in use.

The canopy is so arranged as to be accommodated to any length of the board.

The Universal Extension Board must obviously prove an economical one, as its adoption to any desired size does away with the necessity of carrying several of different lengths.

No 115. The Universal Extension Board, Perforated or Cane Bottom, with White Canopy.....		\$22 00
Can be extended from 3 feet 9 inches to 4 feet 4 inches, 5 feet, 5 feet 7 inches, and 6 feet 3 inches. The canopy fits each length.		
No. 115a.	Black canopy with silk fringe.....	6 50
No. 115b.	Canvas cover for Universal board.....	2 50
No. 115c.	White muslin canopy.....	2 50
No. 115d.	Canvas cover, with leather binding.....	5 00

Gleason Folding Cooling Board.



No. 116. GLEASON COOLING BOARD.

Comment is unnecessary on this board. It is one of the oldest boards on the market and gives good satisfaction.

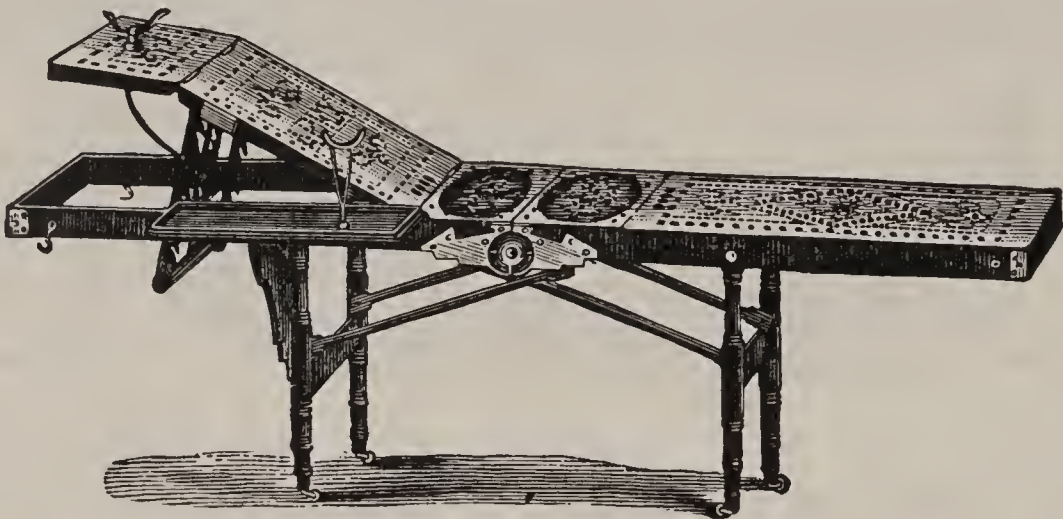
No. 116.	Length, 6 feet 3 inches, width, 1 foot 7 inches.....	\$23 00
No. 117.	“ 6 “ — “ “ 1 “ 7 “	22 00
No. 118.	“ 5 “ 9 “ “ 1 “ 7 “	21 00
No. 119.	“ 5 “ 6 “ “ 1 “ 5 “	20 00
No. 120.	“ 4 “ 4 “ “ 1 “ 4 “	18 00

Including White Seamless Muslin Canopy.

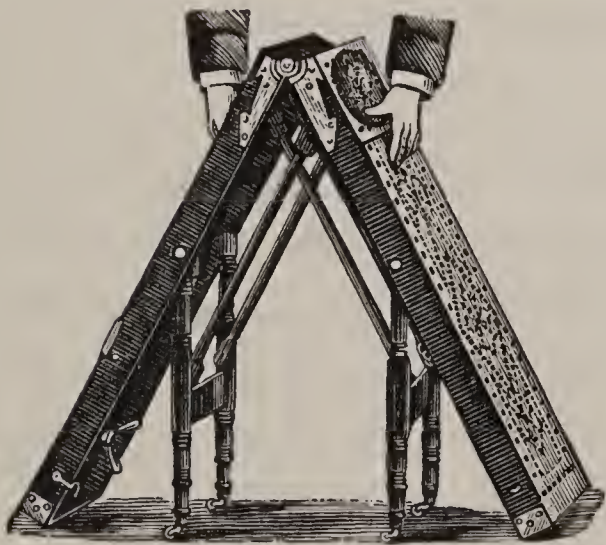
No. 121.	Black Cashmere Canopy, with silk fringe, 2½ inches deep.....	5 00
No. 122.	Same, with silk fringe, fine goods	8 00.
No. 123.	White Canopy	2 00

Apex Embalming Table.

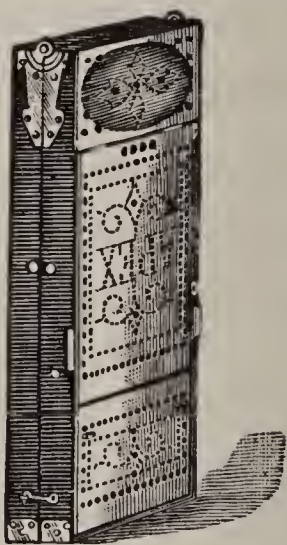
No. 129.	"Apex" Embalming Table, with White Muslin Canopy, 6 feet 2 inches.....	\$25 00
No. 130.	"Apex" Embalming Table, with Black Cashmere Canopy, 6 feet 2 inches.....	30 00
No. 131.	"Apex" Embalming Table, with White Muslin Canopy, 4 feet 6 inches.....	18 00
No. 132.	"Apex" Arm Rest and Operating Shelf.....	2 50
No. 133.	"Apex" Canvas Cover with Leather Straps and Handle.....	2 50



OPEN, (WITHOUT CANOPY.)



PART OPEN.



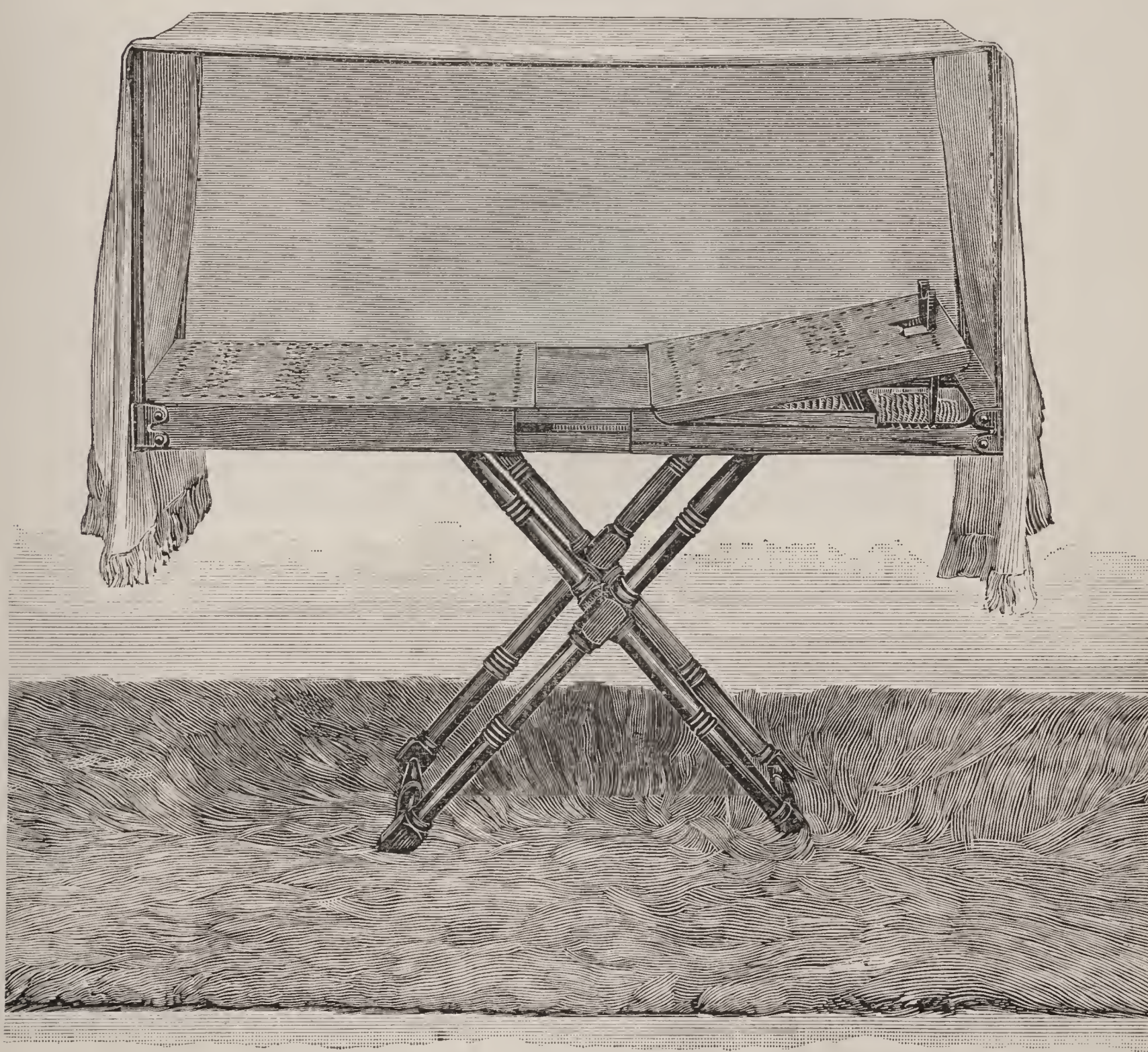
CLOSED.

HEARSE HORSE NETS.

No. A.	Black—Finest grade wool, braided cord.....	per pair	\$20 00
AW.	White—Finest grade wool, braided cord.....	per pair	22 00
AB.	Black—All wool, braided cord, mesh net.....	per pair	14 75
B.	Black—All wool, twisted cord.....	per pair	10 50
C.	White—White cotton, braided cord.....	per pair	10 50

All nets are complete with head pieces.
The "A", "AW" and "C" nets have the head pieces separate.

Excelsior Embalming Board.



CHILD'S EXTENSION BOARD AND PEDESTAL COMBINED.

As an embalming board this one excels all others, the advantage being the extension feature, as well as the fact of the combination pedestal; measures, when closed, three feet, and opens to four feet. When not in use this board occupies a space only three feet long, fifteen inches wide and two and a half inches deep, all packed in a nicely constructed canvas cover, with straps. Weight, 17 pounds.

Price, including canopy.....	\$15 00
Price, including canopy and pedestal drapery.....	20 00
Price, including canopy and cloth drapery	45 00



INCORPORATED.

TERMS.

The price of tuition for the course will be Twenty-five (\$25.00) Dollars payable in advance, with the privilege of free admission to all consecutive lectures for the first year.

A further fee of Five (\$5.00) Dollars will be collected on delivery of the diploma.

All former pupils of the College will be entitled to a seat at all future courses of instructions on payment of Five (\$5.00) Dollars per year, after the first year.

The College will be abundantly supplied with books, charts, and subjects, in order to afford the students all possible facilities in the study of the process.

A. RENOUEARD,

Demonstrator.

Address all communications to

C. B. DOLGE,

P. S.—For further information see “EPITOME,” page LXXIII.

THE EMBALMERS' EPITOME,

A TREATISE ON

EMBALMING COMPOUNDS,

CONTAINING A

Summary of Ancient and Modern Embalming,

By A. RENOVARD,

Demonstrator, United States College of Embalming.

ALSO,

Practical instructions to test accurately the effective strength of
the standard embalming fluids and mixtures now in use.

A COMPENDIUM OF MOST VALUABLE INFORMATION FOR EMBALMERS

By M. O HUNCKE,

Chemist of Embalmers' Supply Company,

DEDICATED TO

THE EMBALMERS OF AMERICA,

AND PUBLISHED BY

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INTRODUCTION.



THE principal object which induced the Embalmers' Supply Company to place this compendium in the hands of the Embalmer is to teach him how to proceed to test an article of such high an importance as the Embalming Fluid is. Besides, and which is also of great interest to the intelligent Embalmer, this pamphlet gives the results and effects of the different chemicals mostly employed in preserving bodies. The history and progress made in the modern art of body preservation will undoubtedly be welcomed by all.

The many fluids, gases and powders, and the numerous formulæ for compounding a fluid are bewildering to the Embalmer, particularly to the beginner. Accident has more to do with what he will use than careful thought or study. He buys a fluid, but how is he to know that the fluid is the article he should use to obtain the best results?

It cannot be expected that every Embalmer should possess a knowledge of chemistry, but without it he is in the dark. He may have done embalming for one or more years and may have been successful; then comes a time, generally in July, August or September, when failure may follow failure.

In his ignorance about the contents of the fluid he has used he naturally will say it must be the fault of the fluid which caused this, as he claims he took the same pains in the case he has lost, or even more so, than when he was successful. It is *then* that the knowledge of testing a fluid is of incalculable value to the Embalmer, as it will prove to him that perhaps the fault was his, and *he will then study and investigate the real cause of the failure*, and not dismiss the case so easily as has been often done by saying the fluid is worthless. When he received the fluid he tested it, found it correct, and he *knows* the fault must be found either in his lack of knowledge or in his carelessness. It is to be hoped that this little book may also be instrumental in driving out of the market the many valueless compounds posing as the "best in the world," and give those firms who are reliable and possess the knowledge necessary to compound a *good, uniform* Embalming Fluid, the patronage they deserve. This epitome will also warn the thoughtful reader who compounds a fluid himself of the dangers which confront him, and the unreliability of the chemicals he buys, without possessing the knowledge of testing the same, to see if they are of the required strength and purity. In giving the tests for fluids, and to have the same as plain as they possibly can be made, it limits the authors to those parts of the fluids only which constitute the principal preserving agent, as the preservation of the body is surely the main object an Embalmer wishes to obtain.

It would lead too far, and a perfect knowledge of chemistry would be necessary,

to enable one to make a full analysis of fluids, as many of them are compounded from several kinds of chemicals which requires the skill and erudition of a trained chemist to compound correctly.

Astonishing indeed is the ignorance shown even by some anatomists, surgeons and physicians in regard to body preservation, and the light manner with which many treat this difficult process, and the numerous perplexing cases which present themselves to the Embalmer (all of which they do not seem to have any knowledge of), neither do they have of the strength or character of the chemicals which are necessary either for their preserving qualities or for their virtue to give to the body the much desired lifelike appearance. But if we find so little knowledge in a sphere where we should look for information, is it, then, surprising that others, who have no similar attainments in the Embalmers' art, rush in to compound a fluid. How many have been lured into the manufacturing of a fluid solely with the expectation of reaping great fortunes from it? Every year more spring up and others disappear. *And how many failures must be attributed to them?*

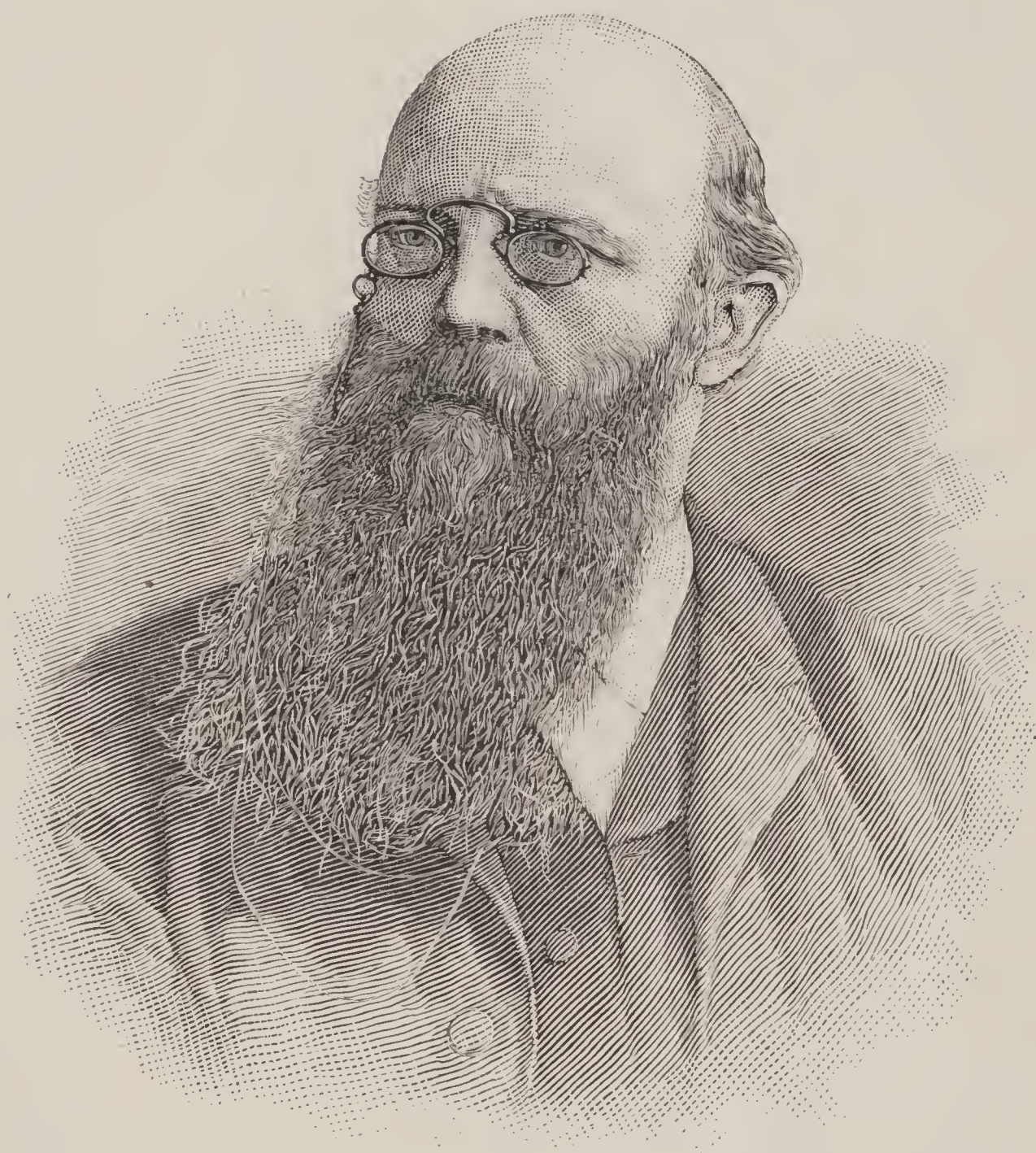
While some good fluids have been on the market from the time embalming began to draw the attention of the enterprising undertaker to that superior present mode of body preservation, the ever investigating and searching mind of the progressive undertaker has hoped and looked for something better. The long list of fluids, powders and gases which have been put upon the market and after a short existence disappeared, prove that they were inferior to what existed or were impracticable. This, coupled with the long list of so-called professors, has caused the unwary undertaker to squander much money, for which in return he has had failures damaging to his business enterprise.

As the light is spreading more broadly, and a larger number of undertakers are becoming perfect Embalmers, the less chance will those men have who pose as teachers, who, in their blindness, do not perceive that very often the attempt to lead those who can see better than they, fails miserably, as has been shown quite often in conventions in the last few years. The different productions (fluids) which the Embalmers' Supply Company manufactures are explained, and a few of the testimonials from the users of UTOPIA are added. The publishers of this little book hope that it may accomplish the good which was intended with its publication; that it may add a little more practical knowledge to that already possessed by good Embalmers, and if so they are amply repaid for their never-tiring efforts to improve and advance the process of embalming.

C. B. DOLGE.



*Yours etc
H. Remond.*



M. O. Hunkeler.

THEORY AND PRACTICE.

All philosophical knowledge proceeds either from observation or experiment, or from both. It is a matter of observation that water, by cold, is converted into ice; but if by means of freezing mixtures or evaporation we actually cause water to freeze, we arrive at the same knowledge by experiment. By repeated observations, and by calculations based on such observations, we discover certain uniform modes in which the powers of nature act. These uniform modes of operation are called laws—and these laws are general or particular according to the extent of the subjects which they respectively embrace; and the collection, combination and proper arrangement of such general and particular laws constitute what is called science.

The terms art and science have not always been employed with proper discrimination. In general an art is that which depends on practice or performance, while science is the examination of general laws, as of abstract and speculative principles. Science differs from art in the same manner that knowledge differs from skill.

The theory of embalming is science; the practice is art.

One of the uniform laws of nature to which we must now refer, to illustrate more comprehensively the subsequent delineation of the forces which act upon it, to pervert its natural results, is the change, or changes in the external appearance of the body, due to the cessation of life and the commencement of decomposition.

We speak of bodies which have not been buried, but which have been kept in the ordinary way, lying on the back and loosely covered with a shroud, or dressed with the ordinary clothes.

When life is extinct and before the blood coagulates, it settles in the veins of the more dependent parts of the body, producing, usually a few hours after death, a mottling of the surface with irregular, livid patches. These patches may coalesce into a uniform dusky, red color over the back of the trunk, head and extremities, and sometimes over the face, ears and neck.

At points of pressure, from folds in the clothes, or from the weight of the body on the table, the red color is absent or less marked.

Very soon after death, particularly in warm weather, the tissues immediately around the subcutaneous veins of the neck and thorax and in other situations, may become stained of a bluish-red color from the decomposition and escape from the vessels of the coloring matter of the blood. If the epidermis has been detached at any point, the skin beneath soon becomes dry and brown. Usually, and according to circumstances, the skin assumes a greenish color in the abdominal region, which gradually spreads, turning to a deeper hue, often changing to greenish purple or brown. Greenish patches now may appear on the surface of the body, on different parts, but earliest on those overlying the cavities. This discoloration is possibly produced in the hæmoglobin, by the gases of decomposition.

The eyeballs now become flaccid, and if the eyelids are not closed the cornea and conjunctiva become brown and dry.

The pressure of gases developed by decomposition in the internal cavities not infrequently forces a lesser or great quantity of frothy, reddish fluid or mucus from

the mouth and nostrils, producing distention of the abdomen, and if excessive may result in changes of position of the blood in the vessels, and even, sometimes, in a moderate amount of displacement of the internal organs.

After five or six days under ordinary circumstances the entire surface may be discolored green or brown. After this the epidermis becomes loosened from the formation of gases and separation of fluids beneath, and the tissues become flaccid. The abdomen and thorax are perhaps greatly distended, the features distorted and scarcely recognizable from swelling, and the hair and nails soon become loosened. Beyond this stage of decomposition the consecutive changes conducive to more or less disintegration of the soft tissues can scarcely be followed with certainty. The rapidity with which these changes follow one another depends upon a variety of conditions, such as temperature, moisture, access of air, and the diseases which have preceded or caused death. The infectious diseases, intemperance and the puerperal condition promote rapid decomposition, as does also death from suffocating gases.

Poisoning by arsenic, alcohol, antimony, sulphuric acid, strychnine and chloroform may retard the progress of decomposition.

The above phenomena in the body after life is extinct is the result of a uniform natural law, intensified in its results by a number of conditions and circumstances which greatly alter the rapidity of its course, but never arrest its progress.

To stay the career of this law, to prevent even its initiatory symptoms before it has revealed itself, the science of preservation, founded upon observation of causes and effects, suggests as primary condition of its application the complete exclusion of atmospheric air. This simple mode of preventing decay in animal substances becomes an important auxiliary; but, alone, proves ineffective in preserving bodies, or at least the few experiments made in that direction do not seem to support the theories advanced by some writers on the subject.

In 1863 Dr. Maxwell, of Edinburgh, treated a subject in the following manner: The body of an old man, tall and muscular but rather meagre, who had died from internal injuries, the result of a fall, was placed into a zinc lined box covered with a thick plate of glass and hermetically sealed. Communication was established by means of an iron pipe between an air pump and the interior of the box, and the pump immediately put in operation; as the air of the box became nearly exhausted, a light froth accompanied with mucus escaped out of the mouth and nose: seven minutes afterwards the pump almost refused to work, and the flow of mucus, now slightly tinged with blood, had greatly increased, but gradually ceased; further trial of the pump proved the vacuum in the box to be as nearly complete as possible. After twenty minutes the pump was again put in motion, and a small amount of air withdrawn, presumably from the lung tissue and other cavities. On the following day no apparent change had taken place; "the pump being used at intervals of a few hours" to preserve the vacuum, although the seams and joints of the box appeared perfect. At the expiration of three days, "the weather being intensely warm," a slight elevation of the abdomen was noticeable, which, however, subsided after a few strokes of the pump, but which reappeared more visibly on the following morning, with a renewal of the escape of mucus and a faint trace of greenish discoloration on the hypogastric and inguinal regions of the abdomen. The veins of the neck, arms and forehead were greatly distended. The eyes were not sunken, but less prominent, owing to an apparently moderate puffing of the cheeks.

The working of the pump now revealed the presence of mephitic gases at the opening of the valve. The body was then removed from the box, and after a few hours of exposure to the air was decomposing rapidly.

In this instance the exclusion of atmospheric air from the body, without the adoption of other means of preservation, did not prove sufficient to prevent the progress of decomposition, it only retarded its usually rapid course under ordinary circumstances. This is the only experimental test of which we possess an authentic record, although subsequent trials with hermetically sealed iron or steel caskets at a later period seem to substantiate to a great extent the facts elicited by the test of Dr. Maxwell.

It is not our intention to introduce into the limited scope of this pamphlet a description of the various means adopted in modern times for the preservation of bodies, or to give a history of the process of embalming up to the present day ; but the object we have in view is to discuss critically the antiseptic properties of the substances used in the manufacture of embalming fluids, the relative and specific strength of these substances, and the manner in which they may affect or otherwise alter the appearance of the bodies into which they are introduced. For this purpose we shall consider retrospectively some of the modes of body preservation which for the last century have successively either become modified, or have been discarded altogether for other more acceptable and successful means. It is worthy of remark that the science of embalming has always been closely united in its gradual advancement with the increase of knowledge gained in both chemistry and physiology, as also the art of embalming is subordinate to the perfection of mechanical appliances and instruments for the proper accomplishment of the work.

The difference between theory and practice, between scientific principles and the practical application thereof, which sometimes exhibits so flagrant a discrepancy between the expected result and the ultimate issue, will be exemplified in the following pages, and may be traced partly to a lack of accurate information of the actual properties of the substances employed ; to the limited number of practical tests insufficient for continuous evidence in the same direction, or a failure to make allowance for surrounding hygrometric and barometric influences, and the chemical changes which may have taken place in the body under certain preëxisting morbid conditions.

ABOUT THE MANY METHODS EMPLOYED IN THE PRESERVATION OF BODIES.

It is an undisputed fact that the science of preserving bodies has made rapid progress during the past decade ; but, to comprehend easily the subject presented to our readers, as well as to fully appreciate the vast amount of labor and scientific researches which have been lavished upon this important branch of the funeral profession, it has become imperative to recapitulate the different processes that have been employed from the remotest epoch, and by various peoples, to the present day.

The reader will find in the following lines an exhaustive and lucid explanation of the successive means employed to preserve the dead, and will thus become familiar with the fundamental principles of an art, which is at this present time affected by the same laws, and subject to the same chemical conditions which governed its practice 5,000 years ago.

To treat this matter more fully, and in order to present the subject in all its historical bearings, we shall have recourse to such authorities as Plutarch, Herodotus, Diodorus, Siculus, Stace, Pliny, Cicero, Clauderus, Penicher, Rodiginus, Gryphius, Crollius, Kircher, Menestrier, Volney, Caylus, Rouyer, Chaussier, Gannal, Chevalier Humboldt, Harrington, Loomis, Farina, Mendala and others.

OF EMBALMING IN GENERAL.

As soon as the spark of life has become extinct in the animal organism, decomposition commences, the elementary constituents become dissociated, and by various chemical combinations give birth to new compounds.

The degree of temperature of the atmosphere, the amount of moisture which it contains, and the action of oxygen, are circumstances which necessarily influence decomposition. But even under similar conditions the process of decomposition does not attack different individuals in the same manner, nor as quickly, and these laws of so much importance in the embalming of bodies have unfortunately not received the degree of attention which they deserve.

The ancients were fully cognizant of this fact, for “Camerarius” says : “There exists a great difference between the bodies of Europeans and those of Oriental nations, as the latter, containing less fat and fleshy tissues, decompose also less rapidly.”

Amieus Marcellinus mentions a circumstance which would seem, to some extent, to support the assertion above made. He says : “Four days after a battle between the Persians and the Romans the features of the last could hardly be recognized, while the Persian bodies were comparatively uninjured by decay.”

This must also forcibly remind us that the climate of Egypt greatly facilitated the preservation of the dead ; and that however much we may admire the skill and science displayed by the Egyptians in their system of preservation, we must also remember that the dry Egyptian climate, and the nitrous nature of the soil, especially in those countries remote from the Nile, have a tendency to preserve bodies from decay. (Smith, and before him Champollion, have also observed the same fact, which is here recorded by Maillet.)

Professor Von Armaz relates in his history of Egypt, Vol. 2, page 173, the following evidences of natural preservation :

“In a crypt in Cairo were found the remains of some Arabian travelers, in a good state of preservation, even to the clothing, which after a lapse of 77 years exhibited little or no alteration.”

In some ruined mosques, on the road from Cairo to Suez, were also discovered the tombs of several Mohammedan kings. The bodies which they contained were so completely desiccated, and consequently so light, that they could easily be raised at arm's length. Among these bodies one did not actually weigh over eight pounds. If, then, we must judge, *a priori*, of the superiority of the embalming process as practised by the Asiatic and African nations and that adopted by Europeans, we must admit that among the first, bodies would have a natural tendency to dry and mummify ; first, because of the nature of the bodies themselves, and also owing to the atmospherical influences on the bodies ; whereas, with the bodies of Europeans, they decompose quickly through the agency of contrary causes.

It is well known that mummies which were preserved intact in the Egyptian catacombs for two or three thousand years decay rapidly and emit an offensive odor when divested of their bandages and exposed to the attacks of our climate.

It is also a fact that the methods of embalming have varied according to the times, location and circumstances. For instance, the Ethiopians, whose country produced gum abundantly, imprisoned the body in a molten mass of transparent gum, which would soon solidify, and preserve the cadaver from the air.

Honey was also employed in the preservation of the dead. Stace relates that the remains of Alexander the Great were preserved in that substance ; and Pliny tells us, in book XXII., chap. XXIV., that the properties of honey are of such a nature that it will prevent decay. Emilius Probius assured us that wax was also employed in preserving the dead, and cites as an example the case of Agesilas, whose remains were completely enveloped in wax for transportation to Sparta, and also the Persians, who, according to Cicero, made use of the same mode of preservation.

However, we do not know all the means anciently adopted for the purpose of indefinitely preventing putrefaction.

Coelius Rodiginaus, in his work on antiquities, alleges that about the year 1414 the body of a young woman, entirely immersed in a saline solution (composition unknown), was found in a tomb on the Via Appia ; and the body of another woman was discovered in a mausoleum near Albano under similar conditions and also in a state of perfect preservation, but these two bodies were secretly disposed of by order of Pope Sixtus IV., who became alarmed at the superstitious reverence paid to them by the populace.

We shall examine hereafter and in detail all of the above systems, and also the so-called wonderful secrets of Clauderus, Debils, Ruysh and Swammerdam, who is said to have sold the secret of his preserving fluid to Peter I., Czar of Russia, about 1672, for a large sum. However, Strader, in 1731, published a process of embalming bodies which he claimed was the identical one sold to the Russian King of Swammerdam.

“The body was laid on a perforated board and placed into a lead vessel, the board being raised about four inches from the bottom ; the body was then covered to a depth of about five inches with oil of turpentine.

“After a week of maceration the body was opened and all the cavities were filled with a mixture of pepper and strong spirits of wine, after which the body was again

placed in the turpentine bath for the space of two months. By carefully applying this process, the body will forever resist the attacks of putrefaction, as well as those of the atmosphere." It is doubtful that this may have been the method employed by Swammerdam, as subsequent trials only proved inefficient to preserve a corpse, even during the first period of the experiment.

The Guanches are, after the Egyptians, the only nation among whom the embalming of bodies seems to have been a national custom, and there also existed a great similarity in the process employed by both in the preservation of the dead. It was not unusual for those people to prepare during life the goat skins which were to form their shroud after death. In some instances the hair was allowed to remain; at other times it was carefully extirpated. Among the Guanches the embalmers, male and female, who ministered to the persons of their respective sex, were liberally paid, but were held in much contempt by the people, and did not mingle with the other classes of the population.

It is an error to suppose that amongst the Guanches the embalmers were priests, and that the secret by which they preserved the dead was lost with the extinction of the ancient priesthood.

The reader will perceive in the following description the strong analogy existing between the process of the Guanches and that of the Egyptians:

The body was extended on a stone slab; when an operator made a long gash in the lower part of the abdomen by means of a sharp stone, shaped like a knife, and named Tabona; through the opening thus made the entire viscera was drawn out and washed in a saturated solution of salt in water. The body, the eyes, the ears, were also thoroughly cleansed with the same solution. All the cavities were then filled with aromatic herbs, and the body exposed to the sun, or the heat of an oven. During the process of desiccation the body was constantly anointed with a species of unguent composed of goat fat and odoriferous plants in powder, of resins, pumice stone, and other substances, intended to absorb the moisture of the tissues. On the fifteenth day the embalming process was complete, and the body was sewed up in the goat skins of which mention has been made before. If the body was that of a person of distinction it was placed in a box of some imputrescible wood, and thus wrapped in skins and encased in a box, was carried to some cave prepared for the purpose.

Another and less dispendious method of preserving bodies consisted in desiccating the corpse by solar heat, after having introduced into the abdomen and chest a corrosive liquor, which destroyed in a short time those deep-seated organs, that the sun could not dry sufficiently to prevent putrefaction. These Xaxos were treated in a similar manner as the others; sewed up in goat skins and carried in grattoes.

As found to-day, these mummies are light and dry; many are well preserved, with the hair and beard; some have lost the finger nails, the features are distinct but shrunken. In some there are traces of a gash in the abdomen, while in others there is not; the color is rather dark, and the smell not unpleasant. It is rightly presumed that the acrid liquor employed in the embalming of bodies was the resinous product of the Euphorbium; some pieces of which were discovered in the mummies.

EMBALMING.



THE GRADUAL PROGRESS OF THE ART AND ITS PRESENT STATUS.

In accordance with our aim as outlined in the preceding chapter, a disquisition on the science of embalming and its progress at different periods of the world's history, becomes urgently needed to emphasize the numerous, and at times, seemingly insuperable difficulties which have been encountered by all investigators in that particular field of learning. Often have theories, supported by scientific principles, failed to produce the anticipated results. More frequently still, these principles, misunderstood and misapplied, have given a startling denial to hastily-formed conclusions and illustrated the lack of initiative on the part of experimenters who, blindly following in a beaten track, regardless of differential conditions as to climate and mode of procedure, have met with constantly recurring disappointments. It is a part of our purpose to present succinctly this erstwhile art, contemporary with the dawn of a civilization whose archives are preserved in the bricks of Babylonia, the hieroglyphics of Khem and the cylinders of Assyria—a civilization which has left us as a tangible, irrefutable proof of its distinctive superiority, its ponderous structures and the stupendous ruins of its gigantic monuments.

We shall reserve for the last the comments which must inevitably follow the indiscriminate adoption of methods and use of substances exhibited by the exposition of the many attempts made in the embalmment of the dead.

The two essential parts of the embalming process among the Guanches and also, as we shall see hereafter, with the Egyptians, consisted first, in desiccating the bodies by depriving them of the water of composition contained in the tissues and of the fat which covered them; and secondly, in preventing the air and the atmospherical moisture from coming in contact with the body. We will see how far the nature of the Egyptian climate assisted the work of the embalmers which we will soon explain in detail. Neither must we omit to mention the vast subterranean vaults which existed near Thebes and which were the natural result of excavating for material from which to build the city. These immense excavations, protected by their position from the overflow of the Nile, preserved an even and unchangeable temperature which, upon experiment, has been found to be 20° Centigrade.

Among the Egyptians, mourning and funerals are conducted in about the following manner: When a man of rank dies, the women of his household cover their heads and even their faces with dirt. Leaving the body at home, they wander around in the city, nude to the waist and beating their breasts, accompanied by their relations; while the men follow about the same course in these matters.

Diodorus Siculus (in Book I., page 102) gives a more exhaustive account of funerals with the Egyptians. According to that historian, the parents of the deceased give due

ENDORSEMENT ESTABLISHES CONFIDENCE.

When dealing with strangers be sure they are well endorsed. Testimonials are sometimes misleading; often they are fraudulent; many times fictitious; but when the character of the endorsers are good, where the proof offered is positive, then you advance with assurance. You are prepared to act intelligently; you believe the facts as presented, the same as if you personally knew them to be so.

It gives me great pleasure to be able to say to you that I have used some four or five kinds of embalming fluids, and find that UTOPIA is the best. On October 3d I embalmed a lady who died of ascites and tuberculosis. I drew twenty quarts of water from the abdomen. She was in a perfect state of preservation October 8th. I could name three or four dropsical cases besides this one, and in every case the body was **perfectly** preserved. I can recommend UTOPIA to every F. D. UTOPIA is a **grand success**.

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CLARK & RADER, WARREN, O.

It works better than any fluid I have ever used. I always take pleasure in recommending UTOPIA to my brother undertakers.

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I have used other fluids previous, but I find **none** that have done their work as well as UTOPIA has.

H. C. GRIFFIN, JERSEY CITY, N. J.

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I have seen your UTOPIA used and believe it to be an excellent substitute for ice, and a good restorer and preservative of color.

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Major and Surgeon United States Army.

UTOPIA is the most desirable preparation I know of.

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We have found that UTOPIA gives general satisfaction and cheerfully recommend it as thoroughly reliable.

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notice of the day of the funeral in order that his friends, relations and the judges may assemble at the appointed time near the shores of a lake; the judges range themselves in a semi-circle on the beach where a boat is in readiness to receive the body; however, before placing the body on the boat, the judges are required, according to law, to listen to whatever accusations may be formulated against the deceased. If the accuser proffers false charges, he is condemned to pay the penalty of the offense with which he has accused the dead; and the body is carried across the lake to the place of sepulture, amid the rejoicings of his friends and the acclamations of the people. If, however, the charges are sustained and the deceased found guilty, the body is brought back to the house and his mummy placed upright against the wall of a room until his friends have either liquidated his debts or by paying the state a certain sum, procured a kind of absolution for his guilt.

The Egyptian embalmers are appointed by legislative authority and follow the profession regularly. When a body is brought to them for embalming, they exhibit to the friends or relations three small models of mummies. The first and most expensive represents the body of "him whose name cannot be spoken" (Rha). The second is not quite so costly, and the third is the cheapest. When the price has been agreed upon and the conditions accepted, the body is left in charge of the embalmers. Here it may be well to explain who the embalmers were, and also the difference existing in the social standing of the various classes of persons whose duty it was to embalm the dead.

The "Kolchytes," counting a certain number of priests among them, managed the business of the embalming house; received the bodies, took orders for embalming, paid tribute to the king, bought the necessary perfumes, spices and materials, and supervised all operations of the process without, however, touching the bodies entrusted to their care. They were highly respected. The "Taricheutes," or, properly speaking, the embalmers, those who manipulated the body during all stages of the process, were allowed to mingle with other citizens, though the odium of their trade clung to them. But the "Parischites," whose duty it was to open the bodies, were considered unclean and treated as outcasts.

The body was stretched at full length on a stone slab, and the brain was removed through the nostrils by means of a crooked piece of iron, after which one of the "Kolchytes" traced upon the left side of the abdomen the exact place and length of the incision to be made, according to the dictates of the law. Then one of the "Parischites," following the indications of the mark left by the "Kolchytes," opened the body with a sharp stone and immediately took to flight, pursued by the imprecations of the assistants, as the Egyptians consider any mutilation of a corpse as a sacrilegious offense. The "Taricheutes" then took entire charge of the remains.

Through the opening thus made the entrails were drawn out, and being thoroughly washed and cleaned with palm wine, were enclosed in a box and thrown in the river Nile, accompanied by a sort of expiatory allocution addressed to the sun. (Porphyry, Book XVII., page 329.) (Kallicrates affirms that in the case of kings and princely persons the intestines were preserved in a coffer of stone. This assertion seems to be confirmed by the finding of some of these coffers in several royal tombs discovered in the Theban chain of mountains, remote from the quarters of the Menonia.) The cavities were then filled with crushed canella and myrrh, and some other aromatic resins and roots except incense, and the opening was closed with a suture. The body was then placed in natrum for seventy days in order to do away with the fat and oily

“That penny is well spent that saves the Groat.”

We add our testimony to the virtue and perfect effectiveness of UTOPIA and cheerfully recommend it as a thoroughly reliable fluid.

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HORACE B. KNOWLES, PROVIDENCE, R. I.

We cheerfully recommend UTOPIA as **The Fluid.**

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I unhesitatingly say that I like UTOPIA above all other fluids used.

T. R. QUIMBY, MILLINGTON, MD.

By permission of J. CHAS. BURTON, Esq., we print the following :

MR. J. CHAS. BURTON.

Dear Sir:—It is with great pleasure I send you clippings from the *Charleston Courier* (with Mayor Courtney's compliments) and to thank you for the manner in which you carried out every detail of the funeral of my late friend, General R. G. Ripley. It must be a great satisfaction to know that your offices are appreciated and that all you did for our late friend, especially your embalming process, was perfect in every detail; his features and complexion were well preserved and all idea of death was removed.

Yours respectfully,

J. W. STUMP NORRIS, M. D.

General R. G. Ripley was embalmed with UTOPIA.

For years I have longed for something that would preserve bodies without the aid of ice boxes. For years I tried different kinds of embalming fluids, no less than four, but I signally failed. As I was casting about for a new fluid, I met your agent and was prevailed to try UTOPIA. I swung clear, so to speak, but with great anxiety for fear it would fail, but it has simply worked wonders. By degrees I found it could always be relied upon, and so I am glad the day has come when I have something that takes the place of the ice box, saving miles of travel and hard lifting, preserving the body better and permitting shrouding at pleasure and shipping it to a distance without its falling apart, and **that something is UTOPIA.**

WRIGHT PEARSALL, ROCKVILLE CENTRE, L. I.

The body looked better the next Monday than it did when he saw it, and was the same the **tenth day** when they buried it. And we will say for UTOPIA, it is the best fluid in the market.

CLARK & RADER, WARREN, O.

substances of the body. (It is more probable, however, that the body was first placed in natrum, and that afterwards the cavities were filled with the resins, as otherwise the natrum would have caused all these resinous substances to saponify.) After the lapse of seventy days the body was taken from the natrum and completely swathed in bandages of cotton or very fine fabric, according to the wealth and rank of the deceased; these bandages were saturated with gum, and entirely covered with many folds every part of the body. The corpse was then returned to the family who placed it in a box resembling the human form, and kept it in their house in some room devoted to the purpose.

Another and less expensive mode of embalming consisted in injecting the abdomen, through the rectum, with a large quantity of cedrium (Monge favors the belief that cedrium was pyroligneous acid in its crude state), without removing any of the entrails, the rectum being closed to prevent the escape of the liquid and the body was placed in natrum for the usual length of time, after which the body was withdrawn from the salt; the injection of cedrium which had formerly been pushed into the abdomen was allowed to escape and the remains were returned to the friends without any further preparation.

The third method, which was considered the cheapest, was as follows: The trunk of the body, the mouth and ears were filled with a liquor called "surmato" (which Smith and also Norton suppose to have been asphaltum), and the body was afterwards submitted to the action of the salt for the usual length of time; this concluded the operation.

It is somewhat singular that in the preceding modes of embalming, Herodotus did not speak of the desiccation of the body, but it must, to some extent, have taken place while the body was undergoing the saline process, which did not consist in immersing the body in a solution of the salt, as some have unwittingly stated, but in placing the body in the natrum itself in a dry state and in the following manner: The bottom of the vessel, generally made of wood and called "keitos," into which the body was deposited, was covered to the depth of eight or ten inches with the crushed crystals of the salt; upon this bed of natrum the body was laid and covered to a depth of a foot or more with the same substance.

It becomes important, here, to note an oversight, if not an error, in the process of embalming as described by Herodotus. The mummies which have reached us in all their integrity, were first swathed in bandages saturated with gum, and enveloped every part of the body separately, even to the fingers and toes, forming a homogeneous covering, inaccessible to the atmosphere. Outside of this covering we find another; in this the bands of linen are wider, not saturated with either gum or resin; beneath them the arms are found crossed upon the breast and the legs are bound together. It is also doubtful that myrrh was ever employed in the preservation of bodies, as none of it was ever found in any mummy which has so far been examined; but we feel more inclined to believe that statement of Mathos, the Egyptian priest of Rha, who says: The first and best method of preservation consisted in the cedria and asphaltum, to which also were added a number of very aromatic substances. In the second, cedria alone was used; and in the third, asphaltum; besides, the saline process formed also a part of the three methods of embalming. Still it is probable that neither Herodotus, Diodorus, Siculus, Trasiphanes or any of the ancient writers were ever informed, accurately, of that mysterious process by which the remains of Thoeta and Queen Nafre were so wonderfully preserved. That there existed a method of embalming unknown to these

" 'Tis not an expense to buy UTOPIA, and save the damage by poor fluids or ice."

I think UTOPIA the best fluid in the market; it does its work to my entire satisfaction. I recommend it to every one that cares for the dead.

L. D. DUNN, MEADVILLE, O.

Allow me to express the wish and hope that all reliable professionals may speedily learn to know the worth of your excellent fluid, UTOPIA.

B. JOLLS, PITTSFIELD, MASS.

Will order in time so as not to be without it.

CORNELL & WILLIAMS, SYRACUSE, N. Y.

I can cheerfully recommend UTOPIA to any F. D. who may be in search of the best article and a thoroughly reliable fluid.

M. GENOUNG, BROOKLYN, N. Y.

UTOPIA works to perfection.

C. W. HILLS, HARTFORD, CONN.

I have used UTOPIA in several severe cases and have found it satisfactory in every instance.

M. RYAN, SYRACUSE, N. Y.

We have tried your fluid to our satisfaction and find it superior to —.

BYERS, DOBYNS & CO., GREENSBURG, IND.

UTOPIA possesses all the requirements of a first-class fluid.

M. T. DEININGER, BROOKLYN, N. Y.

I like your fluid very well.

A. L. HOY, DU BOIS, PA.

We find UTOPIA reliable in every particular.

KENNEY & DILLON, HARTFORD, CONN.

I find that Utopia is just the thing for embalming.

S. L. SWANK, SUMMIT HILL, PA.

UTOPIA has proven very satisfactory.

MCDONALD & SMITH, SWANTON, VT.

I have had good success with your fluid. I should pronounce it a good article.

A. W. GEE, CLAREMONT, N. H.

It is what we want—perfectly reliable in all cases and better than any we have ever used.

MRS. M. CURRAN CONNECTICUT.

I did not have a single failure when using it.

H. E. BOND, BRATTLEBORO, VT.

Embalmed a lady weighing about 350 pounds. The body looks as well as it did a week ago when we embalmed it. The husband could not believe that his wife was dead. I think this is proof of work well done.

I can cheerfully recommend the UTOPIA to all, as I believe it to be the best.

M. E. NANGLE, ALBANY, N. Y.

historians and far superior to the accounts they have left us, must be evident from the state of preservation of some of the specimens in the Boulak museum.

The Egyptian embalmers were acquainted with all parts of the viscera, the spleen, the liver and the kidneys ; those parts which it was forbidden to disturb ; they had found means to remove the brain without injuring the appearance of the skull ; they also understood the action of alkaline substances upon animal matter, since they limited exactly the length of time necessary for the bodies to remain in direct contact with these salts. The insecticide properties of aromatic gums and resins were also known to them, and they understood that in order to protect the body thus desiccated from the moisture of the atmosphere, it must be carefully enveloped. In all this, we observe two distinct and well-reasoned attempts, first, to remove from the body those parts which might have caused putrefaction during the time employed for desiccation ; and second, to remove from the body all the influences which would eventually have led to its destruction.

We must not omit to mention that which probably was the most important part of the embalming process, and which all historians seemed to have ignored. "That the bodies being filled with resinous matters were submitted to the artificial heat of an oven, the temperature of which was suitably adapted to melt the resins, cause their more thorough assimilation with the tissues, and complete the desiccation of the body." In a number of mummies which have been examined, some have been found without any opening in the abdomen, or without any trace indicating the removal of the brain. It is also easy to distinguish those which have been preserved by means of aromatic substances, and those which have been simply eviscerated and placed in natrum. The former have somewhat of an olive color ; the skin is dry and flexible, like tanned leather, slightly drawn and adhering closely to the bones and tissues ; the features are well preserved and seemed to have retained the expression of life ; the cavities of the trunk are filled with a brittle, resinous substance, partly soluble in alcohol. These resins have no particular odor by which they may be known, but when thrown in the fire they give rise to a thick smoke, and exhale a pungent and aromatic odor. These mummies are very dry and easily broken ; the teeth, hair and beard are still firmly planted ; some seem to have been partially, and others completely gilded. They do not change when kept perfectly dry, but when denuded of their envelope and exposed to the atmosphere they absorb moisture and soon give forth a disagreeable odor. The mummies which have been filled with bitumen are very dark, the skin is hard and smooth, and looks as if varnished. These mummies are also dry but heavy. They have been gilded in several places and do not change materially when exposed to the air. In the bodies which do not show any trace of an opening on the left side of the abdomen it is certain that the entrails were either drawn out through the rectum or were destroyed by an injection of caustic soda. The mummies which have been filled with asphaltum and have also been coated outside with the same substance, are almost beyond semblance of shape or features ; the bitumen of these mummies was formerly considered as possessing medical properties, and was used in various specific disorders. Almost all mummies are swathed in the same manner, but a great difference exists in the number of the bandages, and also in the coarseness or delicacy of the tissue of which they are composed. In some instances masks, composed of several thicknesses of fine linen glued together and painted outside to resemble the corpse, were found applied on the face. It is not often that mummies are found in their cases of cedar or sycamore, as these shells have often

"Great exertions don't always end in great results. Don't work so hard but use 'UTOPIA,' and substitute brain work for manual labor."

As an embalmer and bleacher, etc., we consider it the best we have ever used. We would say to the profession, when other fluids fail, use UTOPIA.

WM. PUNCH & SON, ROCHESTER, N. Y.

You certainly have a very superior article of fluid.

S. R. LIPPINCOTT, RICHMOND, IND.

I take great pleasure in informing you that I have given UTOPIA a thorough test on a very bad case of dropsy. The body was in quite a decomposed condition when I took charge of it on March 24; and on Sunday, when I buried it, it was in a perfect state of preservation. Weight of subject, 240 pounds. I consider UTOPIA a very elegant fluid.

A. RAUB, SCRANTON, PA.

We found your UTOPIA worked perfect and is in every way satisfactory.

D. C. WHITTEN & CO., UTICA, N. Y.

I am well pleased with UTOPIA.

JOHN BIEVER, AURORA, ILL.

I cheerfully recommend UTOPIA as the best and safest in all cases.

W. H. SMITH, NEW YORK.

I am free to say that your UTOPIA undoubtedly has very good qualities and I can safely recommend the same.

R. R. BRINGHURST, PHILADELPHIA, PA.

After a fair trial, we do consider UTOPIA one of the best upon the market, if not the best, which we believe it is for arterial work.

E. HOLMES & CO., NEW YORK.

UTOPIA is the boss.

HAWKES & ACKLEY, KEOKUK, IOWA.

We arterially embalmed a lady on September 8th, placed the body in the vault on the 11th; on the 21st we examined it and found it was in as fine a condition as we ever saw a body. We can safely recommend UTOPIA as the best fluid in use.

RIPLEY & HEDGES, INDIANAPOLIS, IND.

What ice or other fluids cannot accomplish UTOPIA does. Thermometer 98 and 100 degrees. Ice failed to preserve the body. UTOPIA brought it back to a natural and lifelike appearance.

On July 5th, I was called to take charge of an eminent physician who had died of cholera morbus, after thirty-six hour's sickness. He was promptly put on ice, I being away at the time. Upon my return I saw the remains and found that something else must be done, as the ice-box was not keeping him. On returning to the store I found Mr. Carpenter, your agent, there. At my request he went with me to the house. We removed the body from the preserver, and he embalmed the remains with UTOPIA, using the brachial artery. The next morning we found the body in a perfect state of preservation; the face, which before had been badly discolored, returned to its natural color, and looked as lifelike as possible. I shipped the body to Palmyra, N. Y., where the services took place thirty-six hours later, and have since learned from his brother-in-law, who accompanied the remains, that he looked as natural as life. I am glad to give my testimony as to the merits of UTOPIA, as I have used it for some time with the result above stated.

FRANK S. HENDERSON, BROOKLYN, N. Y.

been destroyed by the influence of time or some other cause ; but a few have been found sealed in some monolith of stone or of basalt.

The description of the embalming process among the Egyptians, as given above, and transmitted to us by the historians of antiquity, is crude, full of discrepancies and contradictions, and leaves us in total obscurity concerning the system of perfect and astonishing preservation in which the mummy of Queen Nafre was found.

We must not be astonished at the means of perfect preservation employed by the Egyptians, nor at their systematic and scientific application. According to the various kinds of mummies which have been exhumed, and by comparing carefully the different degrees of perfection noticeable in each specimen, we must conclude that the art of embalming, which at first was of a crude nature, must have advanced, become more elaborate, and also become better understood, in the same ratio as other arts and industries progressed, and the sciences advanced under the impulse of the studious, ascetic and powerful priesthood. That the Egyptians understood the rudiments of astronomy, geometry, chemistry and natural philosophy is no longer a matter of doubt ; and more wonderful still, they used tools furnished with diamond points to engrave the hard basaltic stone of their sarcophagi, since iron was unknown to them.

The records of the various embalming processes, as practised by the Egyptians and faithfully reproduced from the writings of Herodotus, seem to us imperfect and lacking in many particulars. That another, and far more complete mode of preservation was known to the embalmers of that land hoary with the mystic lore of accumulated centuries, is now a well established fact ; the discovery of Queen Naige in her opulent splendor of barbaric ornaments has shown to the world a mummy so perfect and so far above our conception of the human power in preserving the dead, that our mind wanders in a labyrinth of thoughts and conjectures before the wondrous skill, the occult intelligence which has produced this almost prehistoric marvel. Some eight years ago the dark Styrix in the desolate Lybian chain surrendered to the light of that same sun which, 3,800 years ago, shone resplendent upon the pylons of royal Thebes the precious treasure which it had so long and so faithfully guarded in its womb of granite.

The modern archæologist, that scientific ferret of the silent ruins, had penetrated the secret of the mysterious catacomb and sacrilegiously disturbed the long sleep of its graceful sovereign.

The mummy of that beauteous woman, who once mounted the throne of the Pharaohs and governed Egypt, was removed with extreme caution to the vast halls of the Boulak Museum in Cairo ; and carefully the numerous coverings and the finely-woven, almost transparent linen were removed, until the young woman appeared in the chaste nudity of her beautiful figure, retaining, in spite of so many centuries gone by, all the roundness of contour, all the supple grace of perfect lines. Ordinarily, mummies prepared with bitumen and natron resemble black images cut out of ebony. The corpse has not returned to the dust from whence it came, but it has hardened into a repulsive object.

Here the body, prepared by a longer, safer and now unknown process, had preserved the elasticity of the flesh ; and the skin, of a light brown, had the hue of a new florentine bronze, and the warm amber tints so much admired in the paintings of Titian. The features wore the calm of slumber more than that of death ; the eyelids showed between their edges, stained with antimony, the enamel of the eyes. It seemed as if they were going to shake off, like the dream of a moment, the sleep of thirty-eight

No praise is too great for "UTOPIA !" in a world where perfect work is necessary to be successful in business.

We embalmed a young lady weighing from one hundred and sixty to one hundred and seventy pounds dying from miscarriage at eight months. This we considered an excellent test case, the body being very fleshy and full of blood at time of death. We embalmed the body with UTOPIA. The body was conveyed from here one hundred and fifty miles up in the state of New Jersey, and after several days interred. The husband said all were surprised and highly pleased at the perfect condition of and natural appearance of the body. Another case we embalmed with UTOPIA was a gentleman of a wealthy family. The family on seeing the body after we had it arranged in the casket, inquired if it were possible that the natural appearance and condition of the body was alone due to our process of embalming. We embalmed a young man, John W. Dosch, with UTOPIA, April 26, 1886, and buried him on April 29. On April 25, 1887, being a year less one day, his family wished to have the remains removed to Philadelphia. Upon examination we found the body in a good state of preservation. We might refer you to dozens of cases in all of which our embalming with UTOPIA has given perfect satisfaction.

W. A. FARIES & BRO., SMYRNA, DEL.

I consider UTOPIA a very elegant fluid.

BENJ. T. LYLE, PHILADELPHIA, PA.

I have used UTOPIA for the past year and have found it to give perfect satisfaction in all cases.

CARMAN PEASELL, NEW YORK.

I have been using UTOPIA for the last year or more, and it has never gone back on me. I have used several different kinds of fluid and never found any as good. It does the work every time.

GEORGE A. WAITT, DANVERS, MASS.

UTOPIA is doing good work.

JOHN N. BRUCE, NEW HAMPSHIRE.

The fluid UTOPIA gives perfect satisfaction in every case in which it is used. We embalmed a lady who died of apoplexy. She looked so natural and lifelike that her friends could hardly believe her to be dead. She was the most perfect preserved corpse we ever saw.

THOS. MITCHELL & BROS., WILMINGTON, DEL.

I consider UTOPIA the best fluid on the market to-day, and do not hesitate in recommending it to the profession.

L. F. TICE, BROOKLYN, N. Y.

UTOPIA—a valuable fluid.

JOHN WESTERFELD, NEW YORK.

I think your UTOPIA first class.

A. R. LAMB, PENNSYLVANIA.

We are highly pleased with UTOPIA, it does the work nicely.

J. TAYLOR & SON, OHIO.

Your UTOPIA does the work perfectly in every respect. Never had a case, with your fluid, go back on us.

WATERHOUSE & PARSONS, MASSACHUSETTS.

centuries. These splendid remains of a beautiful queen were much altered after a few weeks of exposure to the air, according to the report of Mhurad Bey, one of the officers of the museum.

The Osirian priest, Anem-pha, the Hierophant of Memfi, held in his mummy hand an illegible papyrus, which is supposed to contain the secret of the embalming process of sovereigns, the signs corresponding to the words, "left to bathe in the liquor Karah, and anointed with the sacred Amshe," are often repeated. Perhaps time has destroyed in the fingers of the old Colchytes the solution to the enigma of that wonderful preservation of the young queen.

We are not permitted to believe that a people whose skill and genius, so strongly evinced by the remains of their colossi and gigantic monuments, could remain ignorant of the nature of the means by them employed in the preservation of their dead ; neither did they fail to take advantage of the exceptional advantages afforded by their climate to facilitate their purpose.

We may at this point bring forth conspicuously the great analogy existing between the embalming of the Guanches and that of the Egyptians. The mummies discovered in the Canary Islands show traces exactly similar to those of Egypt ; some have the incision on the left side, for the removal of the viscera ; and the same methodical reasoning, viz., that of complete desiccation, appears to have formed, in both instances, the foundation for the theory of indefinite preservation. Was that strange similitude in the process of two peoples so remote from each other the result of an intuition controlled by climatic influences of the same nature ? or did the Guanches obtain their information from the Egyptians ? This last hypothesis would give some substance to the myth, so called, of Atlantis, the ancient Meropis of Theopompus, the Atlantis of Plato, that continent denied by Origen, Jamblichus, Danville, Malte-Brun and Humboldt, who placed its disappearance among the legendary tales ; and admitted by Pasionius, Pliny, Ammianus Marcellinus, Tertullian, Engel, Buffon and D'Avezac ; who knows ?

It is said that the Chinese, at a remote period of their existence as a nation, preserved their dead by means of some mercurial preparation, with which the body was saturated. It has been even reported that bodies in a good state of preservation, were found in tombs of great antiquity in the province of Foochow, and that the bodies fell to dust under the touch of the finger when exposed to the air ; but as these reports lack authentic confirmation, they may be considered as purely imaginary. The Chaldeans and Assyrians, amongst whom the process of embalming does not seem to have been in popular use, have, however, imitated the Egyptians in some instances in their manner of preservation.

The Egyptians were in reality the only nation in the old world where the embalming of the dead was ever accepted as a sort of religious rite and a national custom ; and although we may at times learn of some instance of body preservation amongst the Romans, the Persians, the Greeks and the Jews, the custom never was carried to any great extent by them. Until about the fifth century of the Christian era, the Egyptians continued to preserve their dead, although the practice had already, and for a long time previous, ceased to be general. But in Europe we cannot trace any authentic accounts of attempts at body preservation until about the ninth century, when an English physician by the name of Lawson endeavored to employ, with some modifications, the Egyptian process for the preservation of the dead in his country. His manner of proceeding according to Eberhart was as follows :

"The best is aye the cheapest." Avoid imitations of and substitutes for "UTOPIA."

My Dear Sir:—According to your request I write now to inform you that I arrived on Tuesday the 8th with my sister's body. We had a rough passage out, but notwithstanding all, when the lid was removed, we looked through the glass upon the **perfect face** of the dear one. She looked as though she had just died. My sisters in this country join me in thanking you for all your kindness in looking after our dead.

CLARA W. TAYLOR.

The foregoing letter I received from Miss Taylor, of Kingston, Jamaica, West Indies, and bears testimony of my work with UTOPIA on the remains of J. D. Taylor, who died in this city January 27th and placed in St. Nicholls' vault, January 28th, removed to the steamer February 2d. Funeral occurred at Kingston February 9th. I take great pleasure in forwarding you a copy of the letter, trusting in future to give you yet better accounts of your valuable fluid. I remain, yours truly,

JOHN WESTERVELT, NEW YORK.

I have had very good results by using your UTOPIA.

A. R. LAMB, SCRANTON, PA.

The fluid, UTOPIA, is what was represented to us by your agent, and we are highly pleased with it, for it does the work nicely.

J. TAYLOR & SON, WILMINGTON, O.

I gave your fluid a very thorough test, having a subject on which I used UTOPIA, kept the body in a perfect state of preservation from Saturday until Friday afternoon, shipping the body two hundred miles. It was a very bad case of typhoid fever. I would recommend F. D's UTOPIA as the fluid in all cases.

P. H. GILBERT, HAMILTON, O.

During Mr. Carpenter's stay in Utica, he embalmed the remains of a lady with UTOPIA. She died of dropsy. It was a very difficult case, the weather being very warm. She was kept for five days and was in an excellent state of preservation. UTOPIA is certainly a good fluid, and we cheerfully recommend it.

D. C. WHITTEN & CO., UTICA, N. Y.

Your fluid is A No. 1.

M. F. ROGERS, FRANKFORT, N. Y.

UTOPIA is giving good satisfaction. I had a very difficult case, and it did its work well so that I cannot but speak well for UTOPIA.

H. F. HOWLAND, STREATOR, ILL.

UTOPIA worked like a charm and gave the best results.

J. F. BIRCH, DISTRICT COLUMBIA.

Geo. F. Bender, the skillful embalmer, has given to the world another instance of his unsurpassed professional abilities, and also of the superior excellence of UTOPIA in perfectly preserving the remains of the universally regretted **Roscoe Conkling**.

"SUNNYSIDE."

I can cheerfully recommend UTOPIA to the profession.

WM. PRICE, SCRANTON, PA.

I am pleased with UTOPIA ; it has done all I asked of it.

G. W. SCOVILLE, NORFOLK, CONN.

The body was opened and eviscerated, and washed several times in a strong solution of common salt, until the blood had entirely disappeared from the large vessels and the tissues, when the brain was removed through a hole made in the back of the skull, and the cranial cavity thoroughly cleaned with the above liquid. The body was then left to macerate in a vat, containing equal parts of common salt and saltpetre (saltpetre and its properties had just been discovered by Geber). The length of time occupied by the macerating process is given at three months, although we are given to understand by the chronicler that some of the bodies showed unmistakable signs of decomposition before that time had expired. The body was then swathed in linen bandages saturated with wax, and encased in oak coffins; but owing to the extreme humidity of the climate, bodies thus prepared would putrefy rapidly, and on account of the offensive odor were soon consigned to the earth. The preceding account of a crude and thoughtless imitation of the Egyptian mode of preservation demonstrates fully the great assistance the embalmers found in the dry climate of Egypt, and in the arid, nitrous soil of that country. It also illustrates the folly of expecting similar results from the same process where the climatic conditions are so entirely different. However, this first attempt at body preservation was soon followed by another which proved also a failure, but in another way.

In the year 1007 a Neapolitan surgeon of eminence, Fidelio Paziari, who was then in great repute for having in his laboratory some small specimens of anatomical preparations, undertook to preserve the human body in its entirety. He fell in the same error as those who before him had adopted the ancient process of Egypt, without taking into account the atmospheric conditions; but notwithstanding this lack of discrimination, we can readily perceive a clearer understanding of the laws governing putrefaction. The process of the Italian anatomist consisted in opening the body, and as in the preceding instance removing the contents of the chest and abdomen. The blood was removed by repeated washings of water, and the body was placed in a bath of salt and vinegar for several days, the solution being renewed daily, after which the body was dried with towels and removed to the Solfatara and submitted to the hot sulphurous vapors issuing from the fissures in the ground.

This process also proved useless, as some of the subjects decayed rapidly after being removed from the gaseous influence, and others who were allowed to remain exposed for a longer time to the sulphurous exhalations, presented the appearance of having been steamed, the skin becoming easily detachable, and in some instances also the tissues. The surgeon Paziari was interrupted in his experiments by an order from the Archbishop of Florence, who forbade any further attempt at what the clerical world considered then as sacrilegious proceedings, which feeling was to a great extent shared by the populace, who also had for a long time regarded the scientist's work with deep-seated dread and horror.

It is useless to follow here the numerous and futile efforts made in Europe during the succeeding decades and centuries in the attempt to preserve bodies. It would be irrelevant to the subject in hand, and also would prove of little interest and less instructive to the reader, the more so, that, with the conservatism due to a restriction in the knowledge of scientific discoveries, the old Egyptian process always formed the basis for all methods that were then invented. Spices of all sorts, aromatic herbs, gums and resins of all descriptions were used at random, and possessing in themselves no anti-putrid properties whatever, could not arrest putrefaction. The removal of the brain, the thoracic and abdominal viscera, the long and deep scarifications in the limbs

“ Good service is a great enchantment.” The service of UTOPIA in preserving and embalming is like magic.

I pronounce your fluid to be perfect in every respect. I recommend it to all with perfect safety as a first-class fluid.

THOMAS H. NEALON, TROY, N. Y.

UTOPIA is the very fluid we want.

C. T. WRIGHT, CAMBRIDGE CITY, IND.

I have used UTOPIA several times this summer, and it works to a charm.

SMITH & CO., INDEPENDENCE, MO.

Before I began to use UTOPIA I had given most all other fluids a trial, and I must acknowledge that UTOPIA beats them all.

G. F. BENDER, Embalmer for Patterson, Bevins & Plowright, NEW YORK

Since the introduction of fluid for the preservation of the dead I have been an ardent advocate of the same, and have tried each and every prescription that has been placed upon the market. It affords me great pleasure and it must no doubt be a satisfaction to you to know that among them all I have found UTOPIA to be the one giving the best results, and the most **reliable**, backed up as it is by a house of known responsibility and enterprise. **My wish and advice is that all F. D.'s may try it and learn to know its worth.**

STEWART G. B. GOURLAY, Jr., BROOKLYN, N. Y.

It affords me great pleasure, after giving most other fluids a fair and impartial trial, to say that I have had unbounded success with UTOPIA. I have used UTOPIA the past three years exclusively. I sleep perfectly at ease, knowing UTOPIA has done its work faithfully and truly.

A. LEWIS, BROOKLYN, N. Y.

As thousands of undertakers believe ice to be invaluable to keep a body and that one can rest safe as long as the body is properly cared for, so did I; but my faith in the ice-box was shaken. A lady died of pneumonia, weight about two hundred pounds. I placed her remains in an ice-box with all care and precaution. The next day the body was in a very bad state, purging and bloating, face, neck and ears badly discolored. On my return to the office I found your agent: upon consulting him in regard to the case he was so confident that UTOPIA would restore the body to perfect condition that I did not hesitate to try it. Having UTOPIA on hand I embalmed the remains. After relieving the body of all its gases I injected the body and almost immediately could see a change for the better. About an hour after injecting all discoloration had disappeared, purging stopped, and the body kept in a perfect state of preservation until the day of the funeral, thanks to the good qualities of UTOPIA, which proved to be **more reliable than ice**, and which I urgently recommend to my brothers in the profession.

F. H. PAWNALL, JAMESBURGH, N. J.

My experience with UTOPIA confirms my opinion that UTOPIA is unexcelled.

JACOB SECHLER, PHILADELPHIA, PA.

UTOPIA gives the best satisfaction of any fluid that we have ever used.

MORGAN & BENNETT, OHIO.

I can recommend UTOPIA to the profession in general.

M. E. NANGLE, ALBANY, N. Y.

and the body, to bring the spices in closer contact with the tissues ; but all these rendered the operation repugnant to the feelings, and in that age of deeply-seated religious belief, were viewed as a desecration of the dead. Moreover the results never warranted the obnoxious methods employed.

The preservation of animal matter presents a field of vast interest, and having now become an important branch of the undertaking profession we must be allowed to treat the subject as exhaustively as it demands. Desiccation has been and could be applied indistinctly to the preservation of all animal substances liable to undergo decomposition, but among these substances a large number can be preserved without the agency of the desiccating process, and to this end four other methods present themselves, each one possessing specific advantages of its own, and every one also possessing its own mode of application, subservient to the nature of the body to be preserved, and the requirements of the case.

1st. Animal matter can be preserved by congelation.

2d. By preventing a direct contact of these substances with the surrounding atmosphere.

3d. By surrounding animal substances with others which, and without combining together, will prevent putrefaction.

4th. By bringing them in direct contact with other substances capable of producing, by intimate combination, new compounds which render them imputrescible. This last mode embodies in itself the fundamental principle of the science of embalming, and will form the principal portion of our study. However, and to systemize our researches, examples and deductions of this subject, we will follow automatically the plan traced at the commencement of this paper.

Desiccation can be either natural or artificial. It is natural when we depend solely on the action of the atmosphere upon the substances to be thus preserved ; for instance, the charqui is a method employed in some warm countries for the preservation of meat. The lean parts of the flesh of animals are cut in long thin strips and exposed to the heat of the sun, being careful to turn it over occasionally so as to completely desiccate every part of it ; it is then pulverized in mortars and the powder thus obtained packed in jars ; being placed in a dry spot this becomes a nutritious article of diet, which remains sweet so long as it is protected from the influences of atmospheric moisture. It is artificial when produced by the heat of an oven ; in this instance, the degree of heat must be so graduated as to dissipate the moisture of the substances without scorching, or causing an exudation of the albumen or fibrin contained in the tissues, as the coagulation of these two substances must remain the only objective point.

Congelation.—Some northern nations have applied this method to the preservation of meat and fish. It is said that a “Dinotherium,” a gigantic animal of prehistoric times, and which was undoubtedly caught alive in the ice, was found imbedded in a glacier, on the shores of the Lena, in 1802, and Laplanders greedily ate the flesh of the animal which had thus been imprisoned in the ice for several thousand years. During the explorations of the sea of ice between the rivers Lena and Kolyma, hundreds of elephants, rhinoceros and buffaloes were found buried in the icy soil. Refrigeration has for a somewhat lengthy period been employed in the preservation of bodies.

Exclusion of Air.—Preservation of animal matter by this means can be obtained in two different ways. First, by surrounding the substance to be preserved, with others, which effectually prevent its contact with the atmosphere, or according to the second, animal matter may be introduced into sealed vessels whose air, by allowing

"Don't borrow trouble," buy UTOPIA. 'Tis cheaper in the end.

Have just done the nicest job of embalming I have ever done, and am, therefore, confident of the worth of UTOPIA.

E. J. WISWALL, DeKALB, ILL.

I am using UTOPIA now and am very well pleased with it.

JAMES HEATON, LINCOLN, NEB.

I consider your UTOPIA the best fluid in the market, without any exception.

W. J. MATTHEWS, NEW YORK.

UTOPIA is the best I ever used ; an excellent bleacher, and this is no bluff.

F. A. MCGILL, MARLBORO, MASS.

I have not lost a case this season when using UTOPIA.

THOS. T. BERRY, PAWTUCKET, R. I.

Your UTOPIA is the best fluid I ever have used. I feel safe when using it.

DENNIS TOBIN, PORTLAND, ME.

UTOPIA gives good satisfaction at all times.

JAMES FALLON, PEABODY, MASS.

I am glad to say we have the best success with UTOPIA.

SMITH & CO., INDEPENDENCE, MO.

We can highly recommend your fluid for a first-class article and a fine bleacher.

ROTH & HOEFER, PEORIA, ILL.

* * * A man died of a complication of diseases, particularly heart disease and gangrenous leg. When I was called in, the body was in a room that registered 80° F., and was very much discolored, his right leg being so badly decomposed that the odor was almost unendurable. I embalmed the body by taking up the femoral artery in the right leg, and when I finished the body looked much improved and all disagreeable odors ceased. The next morning I was surprised, all discoloration was gone, the flesh had become firm, and decomposition of the leg had been entirely arrested. During all this time the body had remained in a warm room, and on the day of the funeral there was not the slightest trace of discoloration or any disagreeableness. The family were very much pleased, and in the future will not permit the F. D. (whoever he may be) to resort to ice.

THOMAS P. BROWNE, NEW YORK, N. Y.

We are pleased to say that, after trying several fluids, we have not found any that does the work as well as yours. We embalmed the body of a man who died very suddenly ; death having resulted from hemorrhage. We had no trouble in keeping the remains for sixteen days, and we are highly complimented for keeping the body as well. We cheerfully recommend UTOPIA to undertakers.

A. H. SENIOR & SON, NEWARK, N. J.

We have used UTOPIA until we are fully convinced that it is the best embalming fluid on the market. A lady died of heart disease ; we kept her three days, and the last day the family, without our knowledge, sent for the physician to examine the body, as they were positive she was not dead, but looked as though she was sleeping. She did look elegant. She weighed 175 lbs. We gladly recommend UTOPIA.

HOWELL & TAYLOR, LITTLE FALLS, N. Y.

its oxygen to combine with some of the principles of the substance to be preserved, thereby loses its property to develop putrid fermentation. The first method forms the basis of the means generally employed in museums of natural history, for the preservation of specimens, by immersing them in volatile oils. Another mode similar to the one we are now describing, by its action and effects, consists in varnishing the objects to be preserved with resinous alcoholic solutions, as gutta percha dissolved in chloroform, sulphuret of carbon, etc., which by evaporation leave an impervious coat on the surface of these objects.

For the preservation of microscopic preparations, M. Pacini has proposed the following formula :

Bichloride of Mercury	1 part
Chloride of Iodine	2 parts.
Glycerine	13 parts.
Distilled Water	113 parts.

Let the liquid rest for two months, then add 3 more parts of distilled water and filter.

M. Latour preserves anatomical preparations by means of a solution of Iodine or Bromine :

Iodine	5 parts.
Tartar Emetic	6 parts.
Distilled Water	300 parts.

Or :

Bromine	5 parts.
Tartar Emetic	6 parts.
Distilled Water	500 parts.

The following has also been prepared for immersion :

Corrosive Sublimate	1 part.
Glycerine	20 parts.

Macerate for two weeks, drain until dry, and varnish. As to the results obtained, in the preservation of bodies, by simply enclosing in hermetically sealed metallic caskets, success so far has been the exception, not the rule. The macerating of animal substances in a saturated solution of common salt has been known for a long time, and by adding nitrate of potash to the solution it is said to retain the red color of the tissues. The following has been used in England to preserve muscles and tissues :

Brown Sugar	5 ounces.
Common Salt	10 ounces.
Nitrate of Potash	7½ ounces.
Distilled Water	½ gallon.

In 1872 Mr. Van Vetter proposed for the preservation of anatomical preparations a solution composed as follows :

Glycerine	1 pint.
Brown Sugar	2 ounces.
Saltpetre	2 ounces.
Distilled Water	½ gallon.

In 1873 M. Jaquez employed the borate of soda, boracic acid, and all the borates in general for the same purpose.

The process of preservation applied by Dr. Morgan, which bears some similarity to

“ It's good tale bears telling twice.” “ Use UTOPIA.” “ Use UTOPIA.”

Please ship one barrel of UTOPIA at once. Nothing like UTOPIA these days (August). Please consider me a life member of your patrons. You are at liberty to use my name in testimony of the merits of UTOPIA. Nothing I use, nothing I have, nothing I can do myself that brings me so much praise as UTOPIA, properly used. I embrace every opportunity to speak of its value. I shall use no other.

F. M. FAIRCHILD, BROOKLYN, N. Y.

The body of a lady, weighing over 200 pounds, having died in comparatively full health, was embalmed by Mr. Charles Raynor, Sayville, N. Y. After six days had lapsed since death, and traveling over 150 miles, the body was in a perfect state of preservation. The body was embalmed with UTOPIA.

Please send me a half barrel of your superior UTOPIA embalming fluid. Praised be UTOPIA !

HORACE B. KNOWLES, PROVIDENCE, R. I.

Having used UTOPIA at the time of the flood, and since that time, and having found it very effective in all kinds of cases, I heartily recommend it to the profession as a good and reliable fluid.

JOHN HENDERSON, JOHNSTOWN, PA.

We think your fluid stands at the top ; none better.

WARNER, SMILEY & LITTLETON, BIRMINGHAM, ALA.

Let me congratulate you on the good qualities of your UTOPIA. Kept a body for two weeks. It looked excellent.

A. STILLWELL, GRAVESEND, L. I.

UTOPIA gives us entire satisfaction.

WYLIE & BARCLAY, ATLANTA, GA.

The colonel died of dropsy, and four days after death was placed in a vault. Three months and twelve days afterwards I examined the body in presence of the family. We found the body in the most complete state of preservation, without perceptible change, the features as natural as life. With extreme satisfaction I mail this testimonial of my appreciation of your most excellent UTOPIA.

E. K. BRIGHT, NORTHUMBERLAND, PA.

I have had several bad bodies during this season, but for UTOPIA I would have been helpless.

CHAS. W. SWIFT, ATLANTA, GA.

UTOPIA has given entire satisfaction.

ROBERT & WALTER M. HOLE, SALEM, O.

UTOPIA proves very satisfactory in all respects.

C. T. WRIGHT, CAMBRIDGE CITY, IND.

I think UTOPIA one of the most popular fluids ; it is the undertaker's friend.

GEO. W. WALLER, OTTOWA, KAN.

I embalmed the body of a young man three months ago and buried it. At the expiration of the above time I removed the body. In opening the casket I found the remains in perfect condition. Typhoid fever was the cause of death. This is what UTOPIA can do if properly handled.

A. LEWIS, BROOKLYN, N. Y.

that of Mr. Gannal, consists in injecting into the subject a strong solution of salt and nitrate of potassa, having first emptied the circulating system of the blood therein contained.

In 1866 Mr. Shaler brought to public notice a new mode of preservation by means of carbonic acid, dry and chemically pure.

A number of other methods have also been used with more or less success—by repeated immersions in a solution of sulphate of alumina ; gum tragacanth ; acetate of soda, acetate of lime; by means of sulphurous acid (braconnat); with the oxide of carbon (pelouze) ; by saturating completely with a solution of isinglass, sugar, and gum arabic, to which 2 per cent. of fuschin was added.

Recently Mr. Redwood, of London, thought it possible to preserve meat indefinitely by plunging it in paraffine liquified. To get rid of it the meat is immersed in boiling water, the paraffine is set free by melting, and can be used again for the same purpose.

The fourth method employed for the preservation of organic animal matter, and that which most particularly must arrest our attention, and form the theme of our future studies, is the judicious manipulation of substances, which are capable of forming, with animal matter, combinations and compounds perfectly imputrescible. Creasote, alcohol, tannin, bichloride of mercury, the salts of iron, of zinc, of alumina, carbolic acid, arsenic, the protochloride of tin, thymol, glycerine, the borates in general, salicylic acid, etc., are among those most frequently employed. Creasote is one of the best means used for the purpose ; it is also the most ancient. Cedria, which has been made use of in the embalming of bodies by several nations of antiquity, is analogous to the oil of cade which obviously contains a large percentage of creasote. It is then to this substance much more than to the other products of the cedrium proper that we must attribute its preserving properties. It is also to the properties of creasote that flesh is preserved in the smoking of meats. This method carries within itself two distinct and effectual means of preservation ; first, a partial desiccation of the animal substances; second, their thorough impregnation by the pyrogneous products of smoke. Creasote alone, devoid of all other pyrogneous products, possesses in the highest degree anti-putrid properties. A mixture of

Creasote1 ounce.

Distilled water50 ounces.

has been proposed as a means of effectually preserving anatomical preparations.

Benzine, oil of tar, or simply their emanations, have been found highly useful in preserving animal matter. Phenic acid water, which is composed of

Phenic acid1 ounce.

Distilled Water50 ounces.

has proved to be a cheap and excellent substitute of alcohol for preserving by immersion specimens of natural history. Chloroform in water, in the same proportions given for phenic acid, has also given good results.

Mr. Bellard, demonstrator of anatomy in the school of medicine, was requested to preserve the remains of a young man aged about 30, who died from hectic fever ; a special request was also made not to open the body, as the intention was to keep the remains in a glass case. The bowels were drawn out, opened and cleaned, through a small incision made in the abdomen ; through another incision made under the arm-pits, water was injected in the breast, and an opening cut in the posterior part of the head, the large vena cava and some of the superficial veins were opened, and as much as possible of the blood was taken out, and the arteries were injected with a solution

UTOPIA is the best fluid.

E. R. INGALLS, HAVERHILL, MASS.

I could not do without UTOPIA ; it is the best I ever used.

S. F. FREY, MARIETTA, PA.

Having used UTOPIA for a year and a half I have found it successful.

D. D. O'MAHONEY, NEW YORK, N. Y.

I have used UTOPIA and found it to be a good article. It is the best I ever used yet.

PETER I. ZUGNER, NEW YORK, N. Y.

We wish to make a few remarks in praise of your wonderful fluid, UTOPIA. We have used several different kinds of fluids, but have always found yours the best and most satisfactory. We mention a few cases. Mrs. Anne Murphy died on the 12th of August and was kept until the 23d of August in perfect lifelike condition. Another was Mrs. Jones Vonota. It was a singular case. She kept so natural for six days that, on arriving at the cemetery, burial was refused by the husband, who claimed she was not dead. It was only through the officers of the cemetery that he would have the body buried. We cannot say too much in praise of UTOPIA.

ADAMS & POTENBERG, INDIANAPOLIS, IND.

We used UTOPIA on a body that weighed 650 pounds, October 22d; the casket was 3 feet wide by 5 feet 9 inches long, inside measure. October 26th we buried her; would not have buried her so soon only at Milan, Ind., they had no doors large enough to admit the casket; her husband told me she looked better (and was perfectly embalmed) than when she died. Ten men was required to lift the body. It was lowered from the second story of her dwelling by knocking out brickwork of the window; had to use a derrick to lower her, and what do you think of it? "UTOPIA" was used.

PYE & ERSHELL, NEWPORT, KY.

Dear Sirs:—At the time of death of my father, dying as he did of general dropsy, the body must have contained several gallons of effusion, and I feared the body would not be presentable on the day of the funeral. You will please accept my sincere thanks for the skillful manner in which you removed the effusion and so perfectly preserved the body. I shall consider that I am doing a favor to any of my friends who may be bereft of dear ones by recommending you to them as a skillful undertaker.

DR. D. W. MCNEAL.

This letter was sent to me from a practising physician in Chicago. His father died March 10th. He died in his chair, not having been in bed since November. The body was perfectly immense in size; the skin was so full that it did seem as though it must burst; the water formed in sacks or blisters all over the body. I must have taken four gallons of water from the body. I used UTOPIA as I would water, very freely. We buried the remains on Thursday in a very perfect state of preservation; the countenance was very natural. I had three such cases last week, with perfect success. I shall never be able to repay you for manufacturing and putting upon the market that greatest preserver of the dead, UTOPIA.

M. F. RODGERS, ILLINOIS.

April 9th—I have just returned from the vault at St. Mary's Cemetery and saw the body that I embalmed February 23d, and I find no change, except the eyes have sunken. This was a case of heart disease, and a very large body. The family was much surprised to see the body looking so lifelike. UTOPIA is doing splendid for me; could not be better.

M. E. NANGLE, ALBANY, N. Y.

We have splendid success with UTOPIA in every case.

C. BOGARDUS & SON, ROSSVILLE, N. Y.

of sublimate ; the cavities were filled with salt, and the body was macerated in a solution of corrosive sublimate. During the first month, putrefaction exhibited itself at several points on the body. Some scarifications were made in those parts, and after two months the body was taken out of the bath. The weather being then warm and dry, the corpse dried completely in a few days. After one year, the body being kept in a glass case, did not emit any offensive smell or show any signs of alteration. The skin is of a gray color, but the features, especially the nose, mouth and cheeks, have shrunk greatly.

Another case was treated in a different manner. The viscera was removed through an incision inside the crest of the ilium on the right side, and by cutting through the diaphragm. A small opening made on the posterior part of the head furnished the means for emptying the cranial cavity, by repeated injections ; the globe of the eye was emptied of its contents ; and all the cavities were filled with corrosive sublimate, the mouth being also filled with cotton and sublimate to prevent sinking of the cheeks ; the face was covered with several layers of bandages methodically applied, and the body was wrapped in several sheets, placed in a hogshead containing a saturated solution of sublimate, and shipped to its destination. After a few months the body was found in a good state of preservation, and when exposed to the air dried up in a short time ; artificial eyes were placed in the cavities ; the hair and beard were adhering firmly to the skin, and, when dressed, the body presented a very natural appearance. The body was placed in a glass case, and after the lapse of several years was still in a good state of preservation. Others, who have seen the body, do not seem to share this enthusiasm about the appearance of the remains. It is claimed that the skin soon became of a dark brown color ; that the cellular tissue had entirely disappeared, and that the skin stretched tightly over the angular part of the features, gave the body an appearance anything but natural.

Third instance. Mr. Baudet, a druggist, was called upon to preserve the remains of a young girl 10 years old ; the body was to be kept in a glass case. A bust of the child was made immediately after death, and artificial eyes, the exact counterpart of the natural ones, were selected. The viscera of the head and body were removed ; all the cavities were filled with tow, and the openings closed by sutures. During the operation, the body had been immersed, first in a bath of pure alcohol, then in a weak alcoholic solution of sublimate. The body was then placed in a bath of distilled water, saturated with corrosive sublimate, and in which were suspended several small sacks containing sublimate, in order to keep the solution to the proper point of saturation. The body remained three months in the solution ; 40 pounds of sublimate were used ; and a large quantity of calomel, and also some metallic mercury were precipitated, perhaps owing in a great measure to the fact that the vessel containing the solution was of lead.

After three months the body was withdrawn from the bath ; care was taken to renew the padding process, where the parts had sunk over their cavities ; the artificial eyes were placed in their cavities ; some part of the features, being somewhat altered by shrinkage, were mended in wax by a skillful operator ; the hair was perfectly preserved and very natural, but as the skin had assumed a dark gray appearance, the face was adroitly painted of a natural color.

We are willing to admit that this process is a great improvement on those anterior to it. In place of the many substances formerly in use, and whose properties were badly understood, and even unknown, we have here a single substance possessing well determined properties which, being carefully studied, produced with certainty the results anticipated by the operator.

I have recommended UTOPIA highly ; it does give most satisfactory results.

F. L. DISTELHURST, PENNSYLVANIA.

I am well satisfied with UTOPIA.

R. S. CAIN, WASHINGTON, D. C.

We cannot get along without UTOPIA.

HINCKLEY & MITCHELL, RHODE ISLAND.

We owe much of our wonderful success to the use of UTOPIA. It has not failed us in one instance, and is positively the best fluid. We use nothing else.

OSTERHOUDT & BELCH, NEW YORK.

If you ever want a recommend for your fluid, UTOPIA, I can give you a good one, as I never lost a case with it.

F. H. FENTON, NEW YORK.

A brother undertaker had used **properly** a certain fluid that has a big reputation. The case was blood poison from childbirth, and it fell, to a certain extent, to pieces. I took hold of it to show him what UTOPIA was. The brother says that UTOPIA is as good a fluid as a man would want.

G. H. MILLARD, KANSAS CITY, MO.

UTOPIA is the only success in fluid we ever had ; we claim it is the best in use.

J. FLICKINGER & SON, COLUMBIANA, O.

I shall ever stand by UTOPIA, recommending it as an excellent medium for its excellent preservation of bodies.

JACOB S. SECHLER, PHILADELPHIA, PA.

UTOPIA gives satisfaction, and can say that I feel safe to use it in any case. I gave your fluid a severe test on a body that had dropsy and inflammation of the bowels, and UTOPIA did the work perfect.

CHASE & CO., WATERTOWN, N. Y.

I have just kept a fleshy body through the recent wet and hot weather with no symptoms of decomposition.

H. H. WOOD, CLINTON, N. Y.

I have had the best results in using your fluid above all others.

W. D. NASH, SANDY HILL, N. Y.

UTOPIA is the best fluid in the country.

PARISH & SERVISS, BRANDON, VT.

We embalmed a body with UTOPIA February 14th and shipped it to Oshkosh, Wis. It was placed in a vault there, and about April 10th was examined and found in a perfect state of preservation. Have used UTOPIA generally and always found it satisfactory.

COX & REED, HASTINGS, NEB.

I have sent bodies embalmed with UTOPIA all through to the eastern states close to you, and all reports from their friends are always -- "Look just like life." UTOPIA is the thing if used right.

GEO. U. WALLER, OTTAWA, KAN.

TREATISE ON EMBALMING.

FROM THE WORKS OF MONS. GANNAL.

My researches, in the preservation of bodies for purposes of anatomical study, have led me to investigate the means of embalming the dead. In this latter instance the experiments required less time; and I have been able to vary and multiply them, until I feel now confident that I am actually in possession of perfect means of preservation.

My process is simple; the matters used in the operation are non-poisonous, and therefore present little danger to the embalmer. In fact, and after several methods have been tried, I have adopted the following: I inject downwards, through one of the carotids, an aluminous salt, dissolved in water. A few quarts of the liquid are sufficient, and the body, even when exposed to the air, is preserved for a long time without putrefaction; but it sensibly dries up after a time and even mummifies.

I am using the acetate of alumina, prepared by decomposing the sulphate of alumina and potassa, by the action of acetate of lead. This acetate of alumina, employed at a density of 18 degrees by the areometer of Baumé, and in a quantity of 5 or 6 litres, is amply sufficient to preserve a body for five or six months.

I have also used the simple sulphate of alumina to procure the acetate of this salt. With one kilogramme of the simple sulphate of alumina, 250 grains of acetate of lead and 2 litres of water, the necessary dose of liquid to preserve a body for four months is obtained.

According to Mons. Gannal, sulphate of alumina alone, in the proportion of 1 kilogramme to 5 litres of water, would be amply sufficient to preserve a body for two months.

By this method it has been demonstrated that a body can be preserved for two weeks, one month, or six weeks, more or less—according to the conditions of temperature, the state of the body after death, and the quantity of liquid injected into the vessels.

Examples: In the month of June the body of a man aged 22 years was injected with the fluid and laid on a table in a room facing the south; putrefaction never made its appearance, but after three months the subject was rapidly mummifying.

During the month of July eight bodies were treated in a similar manner, and remained perfect for fifteen days. In August and September more than sixty subjects were injected, with an average result of good preservation for twenty days.

So far my system of embalming has fully demonstrated that bodies can be preserved at all seasons, under circumstances previously laid before the reader, free from all putrefactive odor and changes, and I may yet find some means whereby the danger from anatomical wounds may be altogether deprived of the fatal results usually attending.

The acetate and the simple sulphate of alumina must be selected in preference to all substances heretofore used for the preservation of bodies, and these two salts can, when judiciously employed, fill all the requirements of the embalmer.

But the following objectionable and serious features present themselves in bodies which have been injected with one of the two salts. *If they remain exposed to the*

Ice is a good thing, but not for preserving bodies! Ice has to go wherever the virtues of UTOPIA are known.

I never used any better than UTOPIA. It gave very good satisfaction.

WILLIAM HENRY, PALMYRA, PA.

You can use my name as reference in regard to UTOPIA.

R. J. DAVIS, PHILADELPHIA, PA.

We claim the UTOPIA to be the best fluid we have ever used in our business, and we have tried nearly all of them, but UTOPIA is boss.

J. FLICKINGER & SON, COLUMBIANA, O.

I have used UTOPIA for the past two years, and have found it to surpass any other fluid on the market, and feel safe to recommend it in the highest terms.

C. H. SWIFT, ATLANTA, GA.

UTOPIA did splendid work.

CHAS. F. DOW, ATHOL, MASS.

UTOPIA is doing good work. Have used it on every job, and have had good success.

W. S. RECTOR, GENESEE, N. Y.

I wish to say that I am very much pleased with your fluid, UTOPIA. I have never experienced a failure with it. I embalmed the body of a Swede, drowned while intoxicated **Nov. 13th, 1888**, and kept it laying on a board until the middle of **April, 1889**. It was a perfect success, there being no signs of decomposition. I could have kept him till now. I am sure, if I had not needed the room.

S. B. HORTON, GREENPOINT, N. Y.

We kept the body of a lady who died in confinement, weighing 200 lbs., for four days in perfect condition. I think UTOPIA does all you claim for it.

C. SNYDER, CATASAUQUA, PA.

I have used your fluid UTOPIA and like it well.

B. WINTERSTEIN, REEDSBURGH, O.

I find UTOPIA to be a very good fluid and have had success with it every time.

JOHN H. HOECK, BALTIMORE, MD.

I have had such good success with UTOPIA that I feel like complimenting you; have used it for two years and never had a failure with it. I think UTOPIA is the best fluid made, and your "Derma" comes next.

STEPHENS & SON, ELKHART, IND.

I have been using UTOPIA for some time with the greatest satisfaction. I became convinced that it was a superior fluid.

JOHN H. FOX, SAVANNAH, GA.

UTOPIA is the best fluid I have ever used. I have at present the body of a young man in the vault that I embalmed six weeks ago, and it is in perfect preservation. I embalmed a lady with UTOPIA who died with dropsy—the worst I ever had, and she is nicely preserved. I can highly recommend UTOPIA.

N. H. WILLAMAN, MASSILLON, O.

various thermometric and hygrometric influences of the atmosphere, they must undergo one or the other of the following changes: Either they desiccate rapidly when submitted to the action, of dry and quick air, or else if exposed to a close and humid atmosphere, their color changes to a dark brown, they become covered with mould and soften; without, however, emitting any offensive effluvia, or otherwise exhibiting symptoms of putrefaction. These transformations, to which cadavers were subject, became an obstacle to the application of my process of preservation to the embalming of bodies. The solution of the following problem presents itself: 1st—To preserve bodies in a perfect manner; 2d—To preserve to them the appearance of sleep, or that which they presented immediately after death. 3d—Preservation should be complete for an unlimited period of time; in other words, the embalming must be such as to preserve the body in all its integrity, without any of the deep incisions formerly in use and presenting at any time required all the conditions for a forensic examination.

After many ineffective attempts and repeated experiments, I succeeded at last in obtaining the results which at first baffled all my efforts. We will now see how well I have accomplished my object:

On the 6th of March, 1837, I embalmed the body of Dr. Oudet. I injected eight litres of the liquid, whose composition shall be given hereafter, through the carotid artery; in one-half hour the operation was completed and the body made ready for burial. On the 28th of May following, the body was exhumed in the presence of several physicians and the officials of the cemetery. The remains, which for three months had been buried in an ordinary wood casket, were so perfectly preserved that to all appearances life did not seem extinct, but presented all the symptoms of peaceful slumber.

Mons. Gannal always intended to keep as personal property the composition of his preserving fluids and his mode of using them. He has freely given to us in his works the composition of the liquids which he recommended and used in the preservation of pieces of anatomy, and specimens of natural history. But, as he himself admitted, the method he followed for the embalming of the dead being outside the domain of medical science, he considered it, and justly so, as a means of support for his declining years, and therefore refused to give it publicity. But, if no posthumous works connected with his discoveries appeared, the information which we will place before our readers is derived from sources of indisputable authority and were gathered from unpublished documents found by, and still in possession of, the family, who, for some years after the death of Mons. Gannal, vainly endeavored to turn his discoveries to their own use and benefit, but the ill success attending some of their most important ventures caused them to abandon a pursuit the details of which they were ignorant. To Mons. Gannal we must, however, accord the honor of having greatly simplified the mode of preserving the dead, of having substituted the injection of the arterial system to the repulsive and senseless evisceration and deep scarifications which, until his time, were recognized as an indispensable feature of successful embalming.

The original method of Mons. Gannal simply consists in the following operation: The body is injected through the right carotid downwards, with 6 or 10 litres of the following solution, according to circumstances:

Water, 40 litres; saturated with 500 grammes of arsenious acid. In this solution are dissolved by heat equal parts of the sulphate and of the acetate of alumina, until the liquid attains a density of 20 degrees by the areometer of Baumé.

This simple arterial injection, in the origin, constituted the whole process, but

“Do not put your light under a bushel!” That is why we talk about “UTOPIA.”

We have tried other fluids, but UTOPIA is the best.

DANTZLER & SMITH, GREENVILLE, S. C.

I am not in the habit of going into ecstasy over every fluid that comes into the market, but I desire to say (unsolicited) that after using many of the leading embalming fluids, and finally having used UTOPIA for close on to three years, and none other in that time, I consider it the best in existence.

A. EICKELBERG, NEW YORK,
President of the N. Y. C. U. A.

Adaline Jackson, aged 55 years, cause of death pneumonia, weight fully 500 pounds, was embalmed by Geo. M. Freeman with UTOPIA, and kept splendidly.

—————, NEW JERSEY.

We take the liberty of dropping you a few lines in praise of your wonderful fluid, UTOPIA. We have just completed a case of dropsy which we held for two weeks with your fluid. It looked just as natural as when he died. We have been using several different fluids, and among them all we believe yours to be the leader. In fact your fluid is always in the lead.

CHARLES GIRTON, INDIANAPOLIS, IND.

I was called to take charge of the remains of a Frenchman who died after an illness of four days. He had been dead twenty-four hours; was very badly discolored and purging, so that the matter had run through pillows and blankets to the floor. I injected, after relieving the body of all purging matter, the body with UTOPIA. The next day I found the discoloration removed and everything in perfect condition. I was very much pleased, and was ready to holler for UTOPIA. It has done all, and more, than I have ever asked of it.

G. W. SCOVILLE, NORFOLK, CONN.

We have used UTOPIA for three years, during which time we have given some severe tests. Never use an ice-box in the hottest weather, unless by request; has always given perfect satisfaction. We claim the prize every time for UTOPIA.

JEFFRIES & KEATES, ATLANTIC CITY.

Ever since I graduated from the United States College of Embalming I have had no failure. I embalmed the body of Charles Hauselt. He was a very large man; twenty-two inches across the shoulders and six feet long. He lay from Friday till Saturday. When I was called, his neck, ears and left side of the face was black and swollen out of shape, but with one gallon of your excellent UTOPIA I met with success beyond my expectations; so much so that the family and their friends who viewed the body expressed their astonishment at the lifelike appearance of the remains.

JOHN VAN STEENBURGH, NEW YORK.

I am well pleased with Utopine and fixtures. Derma is something I have always needed and wanted. I gave both, with UTOPIA, a fair trial on a corpse the day received. Shipped to Georgia in excellent condition; died of typhoid fever. I gave UTOPIA an outside trial from regular business of embalming. I was called as coroner four miles from town to a man dead in a well, killed by gas. After pouring nearly a half gallon of UTOPIA down in the well, over fifty feet deep, I sent a man down to tie a rope around the dead man, which he did; did not feel any effects of gas, your UTOPIA having entirely destroyed the same.

A. B. C. DORSEY, GAINESVILLE, GA.

“Belittling competition isn’t in it. Matchless quality is!” That is the record of “UTOPIA.”

Mons. Gannal afterwards found it necessary in some instances to practice an opening in the abdomen on the left side of the body, and to puncture the stomach and bowels in order to relieve them of the amount of gas they contained, and afterwards to inject them with the liquid. We have so far occupied ourselves in chronological order with the several and various modes of preservation for animal substances, from the time of the Egyptians until the middle of the present century. The following pages shall now be devoted to more modern methods and the new chemicals employed.

The embalming of bodies, such as it was some years ago, and is even to the present day, practiced in Europe, had for a basis the property which tannin possesses of forming imputrescible compounds with animal substances. But the systems of Chaussier and Gannal have rendered tannin, as an antiseptic agent, an obsolete feature in embalming.

This process of Chaussier, as modified by M. Boudet, was as follows : The viscera of the body and the brain were removed and preserved separately, and the cavities left by their removal filled with tow or cotton, saturated with an alcoholic solution of corrosive sublimate. While this operation was being performed, the body was plunged several times, alternately, into a bath of alcohol and in one of an alcoholic solution of corrosive sublimate ; afterwards the incisions incidental to the operation were closed by sutures ; and for three months the body was macerated in an aqueous solution of corrosive sublimate. The body was then taken out and suspended horizontally on a network of strong linen bandages, in a well ventilated place, and left to dry until complete desiccation. If necessary, the sides of the body were padded by some new addition of tow in the interior to avoid any deformation. This process has among other advantages upon the older ones, that of keeping the body free from all external envelope which might hide it from sight.

But this method is not free from many objectionable points. In the first place, it requires a large quantity of a substance high in price and of rather dangerous manipulation ; secondly, the operation is long, tedious and difficult ; and last, the mutilation of the body strikes the relatives and friends with an unconquerable feeling of disgust and repugnance.

The process of Gannal is founded upon the property of alumina to form an imputrescible compound with the pre existing matter contained in all animal tissues. M. Gannal gives to the product of this combination the name of geline, because when submitted to the action of boiling water it forms gelatine. The embalming of bodies by this means is performed not only without any danger for the operator, but also at a small cost, as the substance employed does not command a high price. The time required by the operation is comparatively of short duration, as a simple injection of the arterial system, and a short maceration are substituted to the removal of the viscera and the numerous incisions of the preceding mode of preservation. Moreover, the tissues by this process preserve their specific color and elasticity. This process consists in injecting into the arterial system a certain amount of a solution of sulphate of alumina. This injection is followed two or three days afterwards by a maceration of the body for two days into the same liquid. In certain works the composition of the liquid employed by M. Gannal is given thus :

Common salt	1 pound.
Alum	2 pounds.
Saltpetre	2 pounds.
Water	2 gallons.

In the competitive experiments which took place about twenty-five years ago in the presence of several prominent physicians, M. Gannal is said to have made use of

Popularity is a fair test. "UTOPIA" has no equal.

We are glad to say that we are more than pleased with UTOPIA. We have given it a good test during the hot weather, and find it all you can claim for it.

LINNEMANN & MOORE, COVINGTON, KY.

You make the best fluid I have ever used. I will get none but UTOPIA.

N. F. MERRIAM, HAGAMAN'S MILLS, N. Y.

During the hot weather I have given your fluid a fair and impartial trial, and I am very proud to say it has given perfect satisfaction. We only say that UTOPIA only needs to be handled with the skill of a good embalmer.

J. H. TAYLOR, LOUISVILLE, KY.

We have decided that UTOPIA is the best all around fluid on the market.

CROSBY'S UNDERTAKING ESTABLISHMENT, POUGHKEEPSIE, N. Y.

The body of the late **Gen'l W. T. Sherman** was in bad condition, the face strongly discolored, when I arrived there. But UTOPIA worked wonders! The body, after traveling many miles, arrived in St. Louis in a perfect state of preservation. I take this opportunity to recommend UTOPIA to all who may be in need of a good preserver and bleacher, as its efficiency is wonderful.

ROBERT WIGGER, NEW YORK.

The body of Fred. Evans, "the Astor House suicide," was embalmed by me on 3d day of February; it was buried two weeks afterwards; it was exhumed on the 17th of March, and thanks to UTOPIA was found to be in perfect condition. Your fluid cannot be too highly recommended, as it is A. No. 1.

R. DUFFY, NEW YORK.

Press comments on above case:

The body was well preserved —*New York Tribune*.

The features were as perfect as on the day the body was buried, thanks to the embalming of Undertaker Duffy.—*N. Y. World*.

The box itself containing the body was full of mud and water * * * .—*The Sun*.

* * * * showing that the embalming fluid had done its work wonderfully well, as the body was in as good condition as it was when it was buried.—*New York Morning Journal*.

Miss Jessie Boust died Feb. 25th. She was found in her bed dead, her face distorted and black. Mr. E. K. Bright, undertaker, embalmed the corpse, making an incision in the arm, into which over a gallon of fluid was injected. That night the mother entered the parlor to look at the corpse, the skin being white as snow, and the cheeks a rosy red. The next day relatives and friends assembled for interment. The minister was ready to preach, when the announcement of the burial was declared off. It was caused by the belief that they thought Miss Boust was not dead. After some time the burial was decided upon. (From a Northumberland newspaper) On inquiry about the facts Mr. E. K. Bright wrote as follows: Yours received; would say, so far as the death of Miss Boust and time of burial is concerned, it is true, and the UTOPIA fluid was the fluid used. I use no other. Miss Boust was a fine specimen or subject, dying in health and remaining in that condition until she was buried. I have just been told by the father of a child that I buried the first of January (time of writing 26th of March), that he had raised it to put it in another lot, and the child was as natural as the day we buried it. This speaks well for the fluid, whether the undertaker deserves any credit for his work or not. Hoping these statements will benefit you in the sale of your fluid, I remain yours,

Respectfully,

E. K. BRIGHT, NORTHUMBERLAND, PA.

an injecting solution composed of equal parts of the sulphate and the chloride of alumina, at a density of 34 degrees. Those who entered the lists against M. Gannal made use of : 1st, Mr. Dupre —Carbonic and sulphurous acid gas ; 2d, Mr. Sucquet—introducing in the arteries, in the same manner as M. Gannal, a solution of chloride of zinc, marking 4 degrees Baumé. It must be remembered here that Mr. Sucquet was the successful competitor.

Saltpetre, dissolved in a quantity of water sufficient to indicate 10 degrees of density, injected in the bodies, is a good preservative, when the bodies are immersed in a bath of the same solution ; but this becomes powerless when the temperature rises above 10 degrees centigrade. For a higher temperature the liquid must be mixed by heat, as then the solution becomes saturated with a larger quantity of salts, when the liquid is injected in a warm state.

Amongst the saline substances which have given me the most satisfactory results, the deliquescent salts of alumina appear to deserve the preference. The acetate and the chloride of alumina have proved completely satisfactory. Thus, a mixture of chloride of alumina at 20 degrees, and of acetate of alumina at 10 degrees, injected in a body, constitutes about the best means at present in our possession for the embalming of bodies.

Now that I have explained the action of chemical agents upon animal substances, I shall enter upon the details of my experiments.

1st case.—A cadaver was immersed in a bath containing a solution marking 10 degrees—of two parts of alum, two parts of common salt, and one part of saltpetre. This subject was examined several times, and appeared to be well preserved. After about six weeks the body was opened, the tissues and the viscera were found in good condition, but circumstances rendered it impossible to prolong the examination.

2d case.—Two subjects were, November 12, 1834, introduced into a bath of the above solution, and on the 2d of December they were dissected.

On the same day another subject was injected with eight litres of the solution ; and at the end of the month the three subjects were still in a good state of preservation. However, it was noticed that the tissues were becoming very dry, and the color had changed ; but the deep-seated organs which had not come in immediate contact with the liquid presented no alteration whatever. Towards the end of the month of March one of these subjects was injected with a fatty substance, colored ; then it was made evident that the smallest arterial vessels had been penetrated by the injection.

These experiments, which lasted until the middle of May, proved sufficiently that an injection of the saline fluid as given above, followed by an immersion of the body in the same liquid for ten or fifteen days, was sufficient for the preservation of bodies for the work of dissection, and for several months.

3d case.—On the 7th of August a subject was injected with the usual solution at 12 degrees, and immersed in a bath of the same liquid. Eight days afterward the body was greatly swollen with an accumulation of gases to such an extent that it became impossible to keep it from floating on the surface of the bath ; it was taken out, and placed upon a table, when decomposition seemed to be arrested ; the evolution of gases ceased, but a great quantity of liquid mixed with blood escaped. It was then that the body, which had gradually changed to a brown color, commenced to dry up rapidly ; but it was also observed that during that time there was no odor of putrefaction.

Another subject injected with the same liquid, and allowed to remain on a table without being immersed, was decomposed after five days. But the temperature of the atmosphere was then between 84 and 88 degrees above zero.

"UTOPIA," the conqueror of the ice-box.

We have just received a letter to-day, August 28th, from an undertaker in Iowa regarding a body shipped on the 10th of August. He says: "The corpse was in excellent condition when it reached here. The funeral was on the 15th. The wife expressed herself as very much pleased at the manner in which the body was preserved."

WYLIE & BARCLAY, ATLANTA, GA.

I received enclosed letter a few days since; it made me feel good, and I want to divide it with UTOPIA, as that is the fluid that I used.

G. W. SCOVILLE, NORFOLK, CONN.

Thinking you would like to know the result of your work in the case of Louis Bristol, would say the remains were in the same condition as when received. The family were very much pleased with the way the body was preserved, and many remarked on the lifelike appearance of the deceased.

CAULKINS & PRENTIS, NEW LONDON, CONN.

I have been using UTOPIA for the past three years and find it suits me very well, having had success with it in every case.

EDW. GORDON, NEW YORK.

I have used UTOPIA and find it to be a good article in every respect.

F. W. TRAUGOTT, NEW YORK.

I would recommend UTOPIA as the fluid in all cases.

P. H. GILBERT, OHIO.

Your UTOPIA is fine, and does the work to my entire satisfaction.

F. A. MCGILL, MARLBORO, MASS.

UTOPIA is the fluid I mean to use in all cases where embalming is done.

C. F. DOW, ORANGE, MASS.

I wish to congratulate you on the superior qualities of UTOPIA. I can safely recommend it to all embalmers as a thoroughly reliable fluid.

JOS. M. POUCH, BROOKLYN, N. Y.

I gave UTOPIA a trial, which proved successful. I was always a —— man, but am now more than satisfied with UTOPIA.

JOSEPH B. HICKEY, ALTOONA, PA.

I would say I have had good success with your UTOPIA, and can recommend it to all hands.

F. J. STADER, LATROBE, PA.

I have been using UTOPIA ever since 1887, and have always had the very best results.

S. J. LUCKINGS, NEW YORK, N. Y.

Your fluid, UTOPIA, cannot be praised too highly; it will give the best results in all cases, if properly used.

JACOB WRIGHT, TACONY, PA.

On the 8th of August a subject was injected with the liquid at a density of 30 degrees, to acquire which it became necessary to heat the mixture to 90 degrees Fahr., so as to obtain it in a more concentrated form. This body was well preserved, and was used for the purposes of the dissecting room until the end of December.

These various experiments confirmed my already formed opinion that this solution, which fully answered the purpose during the winter, was useless in the summer, or at a temperature beyond 62 degrees Fahr.

Then, the results which I obtained in several instances with the same solution, at a greater degree of density, clearly pointed out to me the path I must follow.

I have already stated that, when brought in contact with animal substances, alum was decomposed; the geline combines with the alumina, and sets free the sulphuric acid, which produces an alteration of the tissues. This decided me to seek for another salt of alumina, containing more base, and an acid less powerful.

On the 16th of August I injected a subject with 8 litres of acetate of alumina, at a density of 20 degrees. This body, placed upon a table without any other preparation, kept perfectly for one month; at the end of that time the nostrils, the eyelids and the lobes of the ears commenced to show signs of desiccation; also the hands and feet. To remedy this, I applied a coat of varnish on one-half of the subject. At the end of sixty days it became apparent that this part of the body, which had remained exposed to the air, gradually shrunk and dried up, whilst those parts which had been varnished were still in a good state of preservation.

A Mr. Piory had indicated a means of preserving bodies. This consisted in surrounding the subject with sheet tin, then swathing it in linen bands, and afterward copiously varnishing the whole. This method has proved very satisfactory on a subject which had been previously injected with a solution of acetate of alumina.

Another subject was injected with the chloride of alumina. This injection was not very successful; and, on three other bodies, the same obstacles were encountered, owing to the fact that the liquid contained in the syringe having been pushed into the arteries the circulatory system became obliterated during the time required to fill the syringe with a fresh quantity of liquid, to such an extent that the combined efforts of two men proved futile in endeavoring to force more fluid into the arterial system.

At a density of 20 degrees, the chloride of alumina possesses so great an affinity for water that it absorbs instantaneously that which is contained in the organs. However, those parts of the body which the injections had penetrated were for a long time extremely well preserved, and the muscles especially had not sustained any discoloration.

I have injected another subject with the same salt in solution, at a density of 8 degrees; but after one month the body was in a state of decomposition.

Last, I injected another body with 1 litre of the chloride solution at 10 degrees, and with 6 litres at 20 degrees. This subject kept well; but the parts which had not been dissected were dried up after five months.

A mixture of 3 litres of acetate of alumina at 10 degrees, and 3 litres of the chloride at 20 degrees, injected either through the aorta or the carotid artery, has given splendid results.

I have also repeated the experiment of Dr. Franchina, of Naples, which consisted in injecting a solution composed of 2 pounds of arsenic in 20 litres of water—or better, alcohol.

For the space of eight days the body remained intact; but after that time it

One thing is sure ; "UTOPIA" stands the hardest kinds of tests.

We are having excellent results with UTOPIA.

PORTER FURNITURE AND UNDERTAKING COMPANY, GREENSBURG, IND.

UTOPIA is prime, A 1 goods, and will do all you claim for it

FRED. J. JOYCE, UNADILLA, N. Y.

UTOPIA does its work wonderfully. I have found it to be the best fluid on the market, and never shall want anything else but UTOPIA.

JOHN BUCZYNSKI, WINONA, MINN.

UTOPIA gives me good satisfaction. It keeps bodies as good as high-priced fluids.

H. BALDWIN, OXFORD, MICH.

UTOPIA is giving entire satisfaction. It does its work excellently in warm weather ; no blisters.

GEO. W. CARE, PHILADELPHIA, PA.

We cannot help speaking very highly of your fluid. A lady died on the 18th of this month and was buried on the 23d, and we had some very warm weather and a couple of thunderstorms in the meantime. I think if your fluid is used the right way it will give perfect satisfaction.

CHAS. SNYDER, CATASAUQUA, PA.

Have been using some of — fluid ; it does good work, but UTOPIA does better.

GEO. F. BARKER, RICHMOND, IND.

I saw the body you embalmed several months after it was placed in the vault and found it was well preserved, and the chances are that it will keep for years.

FRANK L. TETMORE, M. D.

If any one wishes to know the merits of UTOPIA you can refer them to me.

JOSEPH MARFING, BROOKLYN, N. Y.

I have used UTOPIA, and find it superior to all others ; in fact I use no other.

V. ZIMMERMAN, ROCHESTER, IND.

We are using UTOPIA and like it. It has done good work every time. We have had failures with some fluids, but UTOPIA has proven reliable every time so far.

W. & J. GRINDELL, PLATTEVILLE, WIS.

I have used UTOPIA for the past two years with great success.

D. T. BOWEN, PINE BUSH, N. Y.

I embalmed Moses Preston with UTOPIA, and had grand success, as I have had with all other cases. I consider UTOPIA the best fluid that embalmers can use.

JOHN A. VAN STEENBURGH, N. Y.

became gradually desiccated, although placed in a very damp location, and alongside of an open hydrant. Five weeks afterward it was found useless for dissection ; and after two weeks longer it was completely mummified.

I believe that preserving bodies by means of an arsenical solution is really dangerous to the operator. Dr. Pierson, and also two of his colleagues, claimed to have felt very ill after preparing two bodies with that solution, and attributed this to the amount of arsenic they absorbed during the operation.

As an evidence of the dangers attending the manipulation of this salt, I must state that dead flies, in countless numbers, are found on the bodies preserved by arsenical substances. This fact is doubtlessly owing to the generation of arseniated hydrogen gas, whose effect is well known on the animal economy.

At this period of my labors I had already ascertained that the means which had at first given me good results became insufficient under a change of surrounding conditions ; that the salt of alumina, of which I made use for injections, did not contain enough of the basic salt itself ; that the preservation of bodies became uncertain at a certain degree of temperature ; and that I had found in the acetate of alumina the proper substance for eminently anti-putrid injections.

One of the main obstacles to an exhaustive study of anatomy among the ancients was not only the idea of uncleanness attached to the handling and dissection of the dead, or the difficulty of procuring material ; but it was the almost absolute impossibility of preserving cadavers for dissection.

Aristotle, to whom Phillip, King of Macedonia, had furnished all facilities for the dissection of animals, and who must necessarily have collected numerous specimens, does not mention in his works by what means he preserved animals which were not immediately dissected ; and Galien, in his works on anatomical preparations, refers in a few words only as to his means of preservation, which appear to have been simply the maceration of the specimens in preserving liquids.

Cuvier, speaking of the progress of natural sciences, tells us that the discovery of alcohol has most contributed to their advancement. There is certainly cause for astonishment when we compare the means now employed for the preservation of animals in our museums of zoology and anatomy and those during the time of Cuvier. In the face of all preceding statements made, our readers must apprehend that the vast improvements which have taken place during the last decade are chiefly subservient to the facts that more powerful fluids have been discovered, and also better understood, and more complete appliances have replaced the rather crude and primitive implements of our predecessors.

Out of pure superiority "UTOPIA" beats all embalming fluids.

I consider UTOPIA a perfect fluid, meeting all requirements of the modern funeral director. It is a splendid preservative, good bleacher, and does not cause the hands to itch, and burn as some fluids do.

FRED. J. JOYCE, UNADILLA, N. Y.

I am pleased to say to you that I have had great satisfaction in using your UTOPIA fluid. I think it excels all others.

JOS. KENNEDY, New York.

Having used UTOPIA in very bad cases, I am convinced that it will do all that is claimed for it.

W. H. OPLINGER, WADSWORTH, O.

I beg to inform you of three remarkably bad cases that were preserved by your UTOPIA, which I consider the leader. One case was that of a young man who had been shot. I had to keep the body five days, but with UTOPIA I had no trouble, although it was the worst case I ever handled. The other two cases were those of a young couple who were drowned. The bodies had been in water a long time and were in a sickening state. I used one gallon on each of UTOPIA and four hours afterward they were as natural as life. Never had such success in my life as with your UTOPIA. In my opinion it is always the leader.

JOSEPH F. FITZHUGH, IND., Embalmer for **CHAS. GIRTON**.

I cannot afford to be without UTOPIA.

JOHN C. McLAUGHLIN, NEWARK, N. J.

Was called to prepare a severe case July 12th, that had died from cancer of the face; cancer had destroyed one side of the face entirely. The body had been dead several hours and was in a very bad and offensive condition; have not had a worse case in thirteen years of constant experience. Used three quarts of UTOPIA in cavity and arteries; did not see the body again till funeral took place, July 16th. All pronounced it in fine condition. Removed face-cap and glass and there was not a particle of offensive odor. The weather was very hot.

HEEGE & DELANY, INDEPENDENCE, IA.

I am well pleased with UTOPIA. I had recently two bad cases, and with any of the ordinary fluids I would have had trouble to keep them, but with UTOPIA they were preserved in the best condition.

ANTON SENN, TOLEDO, O.

I send you a notice, the same was published in the *Moscow Mirror*: The case was a bad one of Bright's Disease, and I used the never failing UTOPIA.

FRANK C. WILLIAMS, MOSCOW, IDAHO.

UTOPIA has given me great satisfaction.

C. P. JACKSON, New York.

I have used UTOPIA for three years without a failure.

PETER HEATH, LAMBERTVILLE, N. J.

Please send me — gallons of the best fluid on the market, UTOPIA.

F. A. McGILL, MARLBORO, MASS.

A FLORENTINE PROCESS OF EMBALMING AND PREPARATORY EXPERIMENTS.

EXPERIMENTS.

Two subjects were placed in a vat filled with a solution containing of alum and salt each two parts, and saltpetre one part. The water which contained these salts in solution was in quantity sufficient to indicate a density of 15 degrees; as, according to Dr. Venali, the liquid to be effective must mark 7 or 8 degrees in the winter, and 12 or 15 degrees in the summer.

After two months of maceration the bodies were taken out for dissection. Exteriously the appearance was the same, and when open the tissues were also found in good preservation and well adapted to the work of dissection. Other subjects, which had been placed in the same liquid on December 2d, were still being dissected four months afterwards without exhaling any offensive odor, or being much desiccated.

A subject was injected through the left ventricle of the heart with eight litres of the liquid, which eight days afterwards was followed by another injection of fatty colored substances; and, after two months, the body was found so well preserved that it was used for the purpose of anatomical studies several months afterwards. The doctor says:

In the course of my experiments, I often desired to ascertain the length of time a body could resist putrefaction after being removed from the preserving mixture and leaving exposed to the putrid emanations of other cadavers.

Accordingly, a subject was taken out of the bath after two weeks of maceration and placed upon a table with other bodies not similarly treated. After fifteen days putrefaction had made no sensible progress, but the muscles commenced to desiccate and almost mummify, whilst the tissues which had not come in contact with the liquid or which had not been exposed to the air, were still in a condition to allow a critical anatomical analysis. It is necessary to add that the liquid, when brought in contact with the tissues, alters their natural color, but the deep-seated organs are not affected in the same manner. However, the resistance of the fibrous part of the organs is much less than in a subject which has been dead only twenty-four or forty-eight hours. It is also well to remark that under no circumstances have scarifications been made on the body to favor the penetration of the liquid into the tissues. The cranium had not been opened to facilitate the infiltration of the liquid into the brain matter; and still, after more than two months of immersion into the fluid, the brain, when removed from the cranial cavity, could be still used for demonstrations, although improper for exhaustive studies.

Experiments, subsequently conducted to ascertain the results thus obtained by a simple maceration of the bodies, have failed to verify the assertions made by Dr. Venali, and it is now known that the bodies were previously injected before being placed in the bath, and that the liquid contained a large proportion of corrosive sublimate.

After these numerous trials the following questions were yet unsolved: 1st. How long is it possible to prolong this preservation of bodies? 2d. At what temperature does preservation become impossible?

“ To err is human,” but errors in judgment in the selection of a high grade embalming fluid can be avoided by purchasing the old reliable “ UTOPIA.”

UTOPIA is by no means a stranger to us, for we have used it for some time and know it to be no experiment, but an honest and reliable fluid. We used it last week in preparing the remains of a lady who died with dropsy, and whose remains were sent to Montana for burial. We kept her for a full week. When the relatives arrived she was looking as natural as in life and they were greatly pleased at what we had done. The husband is going to write us as to how she looked at the end of their long journey, but we feel confident that UTOPIA had done its work well.

JAMESON & STULL, NORTH-EAST, PA.

Dr. Allen Hagenbuck died of consumption, and I received the body in a rude coffin three days after he died. The whole corpse was in an advanced stage of decomposition ; the neck, chest and abdomen were greatly distended with gases, and everything was getting quite green. After removing the gases your UTOPIA fluid was injected. Two days afterwards the body was laid out in a handsome cloth covered casket, the body having been restored to its natural condition and appearance. A very large number of friends viewed the body and sat in the parlor where the body was without noticing any odor whatever. To quote the language of a man who saw the body in both conditions : “ I don't see how the undertaker could ever do such a thing.” The family, of course, praise me very highly, and I am equally high in the praise of UTOPIA.

CHAS. LARAMY, BETHLEHEM, PA.

We have been using UTOPIA for nearly two years in both cavity and arterial work and found it equal to every emergency. We kept a case of peritonitis (in very bad condition we received it) from Monday until the following Saturday, in very warm weather, and upon the day of the funeral it was in perfect condition. In this case we only injected the cavities. Another case, an old colored man dying of dropsy and lying more than two days before we saw him. It was in a fearful condition—abdomen distended, purging from mouth and nose, smelling horribly. Treated it with both arterial and cavity process, drawing water and gases away previous to injecting. Kept him two days longer and had it in first-class condition. We cannot speak too highly in the praise of UTOPIA.

J. S. RODGERS & SON, HEIGHTSTOWN, N. J.

I find your UTOPIA to give the very best satisfaction of any fluid I ever used, and I have tried quite a number. I embalmed a very bad case a few days ago, and kept the body for almost a week, and it was perfect—it was a very fine job : also kept a difficult case for three weeks in a vault. When the casket lid was removed the body was in a perfect state of preservation. I also kept a very bad case of typhoid fever last week, and numerous other cases I could mention. I am depending on UTOPIA entirely, as I don't own an ice box.

W. J. RULE, PHILA., PA.

Enclosed find clipping from the Gainesville *Eagle*, relating to embalming of Mr. Hirsch, April 12th. He was buried the 22d at Chicago :—

“ * * * The corpse, on its arrival in Chicago, was found to be in an excellent state of preservation, owing to the perfect manner in which it had been embalmed by Mr. A. B. C. Dorsey, Gainesville's expert embalmer and funeral director. * * * ”

I had a case last Saturday ; a large man died of apoplexy ; had been dead some twelve hours before I arrived ; had turned very dark. By the use of UTOPIA I restored him to his natural color and kept him finely.

A. B. C. DORSEY, GAINESVILLE, GA.

And could this process permit of preserving bodies during the summer, in numbers sufficient to supply medical colleges during the winter; and if cadavers thus preserved may not become a cause of disease for those employed in their dissection?

To answer all these questions fully would have required more various and lengthy experiments, and on a greater number of objects than could be procured.

ANOTHER PROCESS.

An incision five or six inches in length is cut transversly from right to left in the abdominal region, over the stomach, about one inch below the curvature of the lower ribs. Through this opening are revealed the stomach on the left and the liver on the right of the body, the transverse colon in the middle and the small intestines below.

If the stomach is found inflated with gas, or filled with some liquid or solid substance, it must be opened, its contents allowed to escape, and it must also be injected. After the stomach has been emptied it is filled with the embalming fluid.

The small intestines must be gently and carefully drawn out, and allowed to lay on the right side of the abdomen; this will reveal in the abdominal region a cavity which may or may not be filled with serum, according to circumstances. At any rate, should there be any liquid, it must be carefully pumped out or sponged off until perfectly dry.

The cavity is then to be sprinkled heavily with tannic acid. The small intestines must then, and before being replaced, be next attended to. If inflated with nothing but gas, a simple puncture at different points, so as to favor the escape of the gas, and a moderate injection through the aperture, will suffice.

If, however, the intestine should be found congested with blood or some other substance, the contents must be emptied by the following method: Seize firmly, between the two forefingers of the left hand, the intestine, at the lowest point you can reach, and with the right hand draw the intestine through the fingers of the left; this will have the effect of forcing the contents of the intestine forward in front of the fingers of the left hand. After the matter has so accumulated that the progress is impeded, the intestine must be cut, the matter extracted, the part which has thus been emptied injected with the embalming fluid, and then tied up. This operation must be repeated until the whole of the intestines, small and large, have been emptied and injected, and then the whole is to be replaced into the cavity. About one pint of the embalming fluid must be poured over the intestines, and the wound neatly sewed together. It may be found necessary before closing the opening to lay a thickness of cotton batten over the bowels and under the walls of the abdomen.

Should the lungs be congested with blood, they must be emptied. This object may be attained either by pressing upon the lower part of the thorax, which will have the effect of forcing the blood out through the nostrils and mouth. The injection of the thoracic cavity can also be performed through the same opening. The utmost caution must be used in perforating the diaphragm, as some of the arteries might be wounded by a careless use of the knife.

The above operation may be performed before closing the wound in the abdomen, or replacing the intestines, as it will be easier to collect the serous fluid. The lungs should in all cases be well injected, either through the trachea or by the process given above.

The arterial system is next to be injected, but previous to it, the external jugular veins on each side of the neck are punctured, and the blood allowed to flow freely.

[FROM THE SUNNYSIDE.]

SPLENDID EMBALMING.

Isaiah T. Ryan, of Philadelphia, Receives Many Testimonials to His Skill and Care in Preparing the Remains of a Railroad Disaster for Interment.

The popular and well-known professional of Philadelphia, Pa., Isaiah T. Ryan, who had charge of the preparing for burial of the unfortunate victims in the Manayunk Tunnel railroad disaster, on October 24th, has received warm words of praise from the relatives of those who were killed, for the careful and painstaking manner in which he performed his duties. All of the bodies were badly mangled, but notwithstanding this fact, and although he did not receive them until eight or ten hours after the accident, he succeeded, by his knowledge of the art of embalming, in restoring them to a life-like appearance, and when shipped the next day to their several homes, they were in a splendid state of preservation.

Following are a few of the testimonials which Mr. Ryan has received :

READING, PA., Nov. 10, 1892.

Please accept the thanks of myself and family for the manner in which you prepared the body of my late husband, and also accept thanks for your very valuable services in helping to get the injured to the hospital so quickly and tenderly. Very respectfully,

MRS. HIRAM GOTTSCHALL.

HARRISBURG, PA., Oct. 31, 1892.

The body of the Hon. David S. Hess arrived here on the 26th and was buried the next day at 2 o'clock. The body was in a perfect state of preservation, and the family was very much pleased with everything that was done. Respectfully yours,

JOSEPH J. OGELSBY, Funeral Director, 111 N. Second street.

TAMAQUA, PA.

The body of James Kilrain reached here in very good order. The family were well satisfied, and I do not think there could be any complaints, as everything was done with neatness and care. Sincerely yours,

E. J. KELLY, Undertaker.

READING, PA.

The body of John Steiff reached me in first-class condition and was buried Thursday, 27th, at 1:30. The family and myself were very much pleased. Please let me know if you did cavity or arterial work. Fraternally yours,

HUNTER HENNINGER.

P. S.—The Boynton family were also loud in their praise of you for the manner which you sent the body of James Boynton. Very truly,

WILL. O. STEIFF.

MINERSVILLE, PA.

The body of Ellen Devine looked very well on the day of funeral, 28th, and everything was very satisfactory. The body of Annie Atkinson was also in perfect preservation.

Yours truly,

E. HUMMEL, Undertaker.

AUBURN, PA.

We wish to thank you more than these few words can express, for the very nice and perfect manner you prepared the body of Thomas A. Welsh and sent it to his bereaved home. Everything was of the best, and he looked more like sleeping than dead. Very sincerely,

HIS MOTHER AND BROTHER.

It is only fair to state that Mr. Ryan's success is due, in part, to that celebrated embalming fluid, UTOPIA, which he used in all of the above cases.

The femoral artery is the one selected in this process for injection ; at a point below the arch, about eight inches from and below Poupart's ligament. After the artery is raised to the surface, a small incision is made through its coats, large enough to admit the nozzle of the injector, which is pushed upwards into it as far as necessary; the artery is firmly fastened around it, and the injecting of the fluid begins.

On the manner of injecting the fluid depends in a great measure the success of the operation.

The injection should be performed slowly and regularly ; and after about a pint of fluid has been injected, the operation should be suspended for about ten minutes, after which it is to be resumed in the same manner, until a gallon and a half or two gallons of fluid have been injected.

The jugular veins are to remain opened so long as the flow of blood continues, but they must be closed as soon as the embalming fluid makes its appearance. This process is very complete, but requires lacerations too large and numerous to be acceptable. However, and in extreme cases, it must prove very reliable, especially if the splenic artery is used instead of the femoral, for injecting the fluid.

SEVERAL PROCESSES OF PRESERVATION WHICH, ALTHOUGH OBSOLETE, PRESENT SOME VERY USEFUL SUGGESTIONS.

Locanu, in his researches on the preservation of bodies for the purpose of anatomical studies, has thus described his process :

The body of a man aged thirty-three years, who died of typhoid fever, was brought in for dissection. The external appearance of the corpse presented marks of dissolution. The abdomen, already slightly tinged with greenish streaks, was distended with gas ; the neck and lower part of the face showed unmistakable signs of swelling, and the evolution of internal gases caused a frothy mucus to appear at the corners of the mouth ; the popliteal artery was uncovered and the canula of a syringe containing ten centilitres introduced into the vessel. Five litres of a fluid composed of equal parts alcohol, water and glycerine, holding one-fourth part carbolic acid in solution, were thus injected into the body. Gradually the abdomen resumed its normal size, the bluish green tint of the skin faded perceptibly. At the seventh litre of the liquid thus injected, about eleven grammes of mucus were ejected from the mouth. The operation was then suspended, and the artery firmly tied up. The canula of the syringe was inverted, and the lower limb treated in a similar manner. On the next day the incipient swelling of the head and neck had disappeared, and the discoloration on the abdomen was scarcely visible.

There are modifications in the processes used for the preservation of bodies, which are governed by circumstances affecting the different conditions of the body at the time of death. Although we may give general rules for the quantity and variety of antiseptics used in embalming, there are certain cases where the quantity of the chemicals which enter into the composition of the injecting fluid must be either increased or curtailed, as well as the amount of the injection.

The mode of operation in all cases may be the same, but the nature and quantity of the injection will vary—first, with the climatic circumstances of the atmosphere ; second, with the cause of death ; third, with the age of the deceased ; fourth, with the state of the body after death ; fifth, with the length of time which has elapsed since death took place.

Popularity is often founded on sentiment, but the popularity of "UTOPIA" is based on merit.

* * * It was then nearly three days after taking the body from the water that Mr. James McGowan undertook to embalm it. Next day the body was viewed by thousands of people. During the week it remained in the store, surprise and astonishment were depicted on each feature as they gazed on the life-like appearance of the dead. Mr. McGowan always uses UTOPIA fluid. He used UTOPIA on above case, and preserved his subject with the result given.

R. J. MCGOWAN & SON, New York.

—Extract from the *Sunnyside*, January, 1893.

I have used UTOPIA for over a year, and it has given the best satisfaction, even in the worst cases, consequently I want no other.

G. F. WALKER, Baltimore, Md.

We have used UTOPIA for the past two years, and have tested it to our satisfaction. We swear by any case we treat with UTOPIA as a preservative,

DUFF & OLDROYD, Arkansas City, Kans.

We have used UTOPIA for years, and want no other.

RYE & ERSHELL, Newport, Ky.

"And still UTOPIA triumphs over decay."

FRANK M. FAIRCHILD, Brooklyn, N. Y.

"Have used UTOPIA for more than two years and have received splendid satisfaction. Could not get along without it."

W. H. OPLINGER, Wadsworth, O.

Enclosed please find a letter, sent to me for a body I embalmed, and sent over a thousand miles (48 hours on the railroad), he was buried on the seventh day, and I think nothing of it. I send this because I read so much "brag" in the trade papers about other fluids and their great success in embalming. This is only one of more than a score of letters which I received, as I have the opportunity as Coroner of Hudson County very often.

G. A. BEYER, Union Hill, N. J.

MR. GUSTAVE A. BEYER :

Dear Sir—The body of the late Dr. Day arrived in Chicago in very good shape, in fact it looked better than it did when we opened the coffin at the depot. I write this for your information and to keep my promise good.

Very respectfully,

A. J. MAIS.

I have been much pleased with everything received, and your fluid, UTOPIA, gave perfect satisfaction last summer. On no account would I venture to make a change. I know not what failure is in using it.

EZRA W. LEWIS, Nantucket, Mass.

"UTOPIA," as well as one of the graduates of the United States College of Embalming, comes once more to the front—always successful. The enclosed copy of letter we received from Denton, Texas, speaks for itself. The subject weighed over 225 pounds; cause of death—apoplexy. It traveled three full days. Brother Smitz is one of the leading embalmers of Denton :

"G. CHANDLER PAUL & SON, Philadelphia, Pa.,

"The body of Eugene K. Fritzlen, embalmed by you with UTOPIA fluid, arrived here in a first-class condition, having a perfect life-like appearance and being well preserved. The relations and friends of the deceased were well satisfied in every respect. Your work was well done, especially so when taking into consideration the subject in question, and the cause of death.

"J. B. SMITZ, Denton, Texas."

It has been demonstrated that a high temperature is conducive to rapid decomposition of organic matter ; also, that a warm, moist atmosphere will act in a similar manner ; it becomes, therefore, somewhat important to keep the body in a cool, well-ventilated place, if possible, until the operation is ended. It is well known that the cause of death, the state of the body and the surrounding conditions, exert a powerful influence on the preservation of the body.

The important point we wish to impress now upon the minds of our professionals is, that circumstances in this case are to be strictly investigated ; also, that a uniform treatment of all cases, however different the circumstances and conditions, will not prove successful ; and that a thorough knowledge and experience are necessary to achieve satisfactory results.

Discrimination and judgment are to be used in every case. Some are too ready to condemn a certain process, or to question the properties of some antiseptics, because their first trial of either has proved an ignominious failure ; whereas the real cause of all the trouble lies in their ignorance of the laws which govern the mode of proceeding, and the use of the chemicals placed at their disposition.

Others, again, are prone to extol the merits of some preparation, the component parts of which they do not know, but it may have done them good service in several instances ; and when, contrary to their expectations, it fails to answer the purpose, they lose faith in it, and discard it altogether as worthless.

Hence, it is a fact not to be denied that a diagnosis (if it may be called so) is necessary before the work of embalming be entered into. And he who would endeavor to preserve the body of a stout, fleshy person by the same means employed in the preserving of a body emaciated by long sufferings, and under different conditions of temperature, might not meet with a success equal to his expectation.

Dr. Wywodzoff, of St. Petersburg, Russia, says for temporary preservation of bodies for anatomical investigation, the following requisites are necessary :

The body must remain in a soft and flexible condition for at least three months ; the tissues must not change color ; the material must not be injurious either to the health of the operator or corrode the instruments, and be free from odor. He recommends the following : Thymole, 2 ounces ; alcohol, 2 quarts ; glycerine, 2 quarts ; water, $\frac{1}{2}$ gallon ; used as an arterial injection.

Others, again, vary in the manner of proceeding, and although the arteries are injected, other manipulations are necessary—namely, to preserve a body, thoroughly saturate it immediately after death by repeated applications with a soft brush to the back, face, chest, abdomen and the limbs ; then inject in the various orifices of the body as much fluid as will be retained, and close them with cotton. Fold three or four thickness of toweling, soaked in the fluid, upon the abdomen, breast and neck, renewing the wetting two or three times daily ; cover the face and hands with muslin three or four times folded, wet with the fluid the same number of times, using a quart or more in quantity. If the body is to be shipped or kept for a long deferred interment, follow the above directions implicitly, and, in addition, insert the hypodermic needle in the navel, to withdraw any accumulation of fluid and permit the escape of gas ; then attach to the syringe and inject in the cavity a liberal quantity of the fluid, using a pint and a half or more. Should the undertaker be able to inject the arterial system, by means of the needle inserted in the femoral artery, it would be of great importance ; or, in his inability to do so, could he procure the services of a surgeon, the operation would then be complete.

UTOPIA is popular with all classes of embalmers for its acknowledged excellence.

Messrs. Martin Fahey & Sons, of Baltimore, had charge of the remains of the late Deputy Marshal of the Baltimore police force, John Lannan. They embalmed the remains with UTOPIA, and the result was a credit to the embalmer and the fluid UTOPIA. The service was held in the Cathedral in the presence of Cardinal Gibbons. Throngs of his friends were present. The remains were shipped to Philadelphia, where Jos. K. Hookey took charge of it. Mr. Hookey wrote to Messrs. Fahey & Sons that the remains arrived in a splendid state of preservation.

I have been very successful this summer with your fluid. I have not lost one case. It gives perfect satisfaction.

J. N. JONES, Norfolk, Va.

I have been intending to write you to let you know what we did with UTOPIA. We kept a body forty-four days before we buried it. He was in a perfect state of preservation, the only defect was his eyes, which had sunken a little. We showed him to all the traveling men that came here. I think we could have kept him much longer.

J. W. BROWN, Hampton, Va.

I kept the body which was embalmed with UTOPIA for ten days. It was perfect, and if I had had the room could have kept it for months. It was seen by hundreds of people and pronounced a success.

JOHN H. NEAL, Searcy, Ark.

We are more than satisfied with your fluid. We have embalmed bodies and shipped them to England, and have fine letters from the people there. We are only too willing to recommend a fluid that has given us the satisfaction UTOPIA has.

MARTIN, MORRISON & HEYL, San Francisco, Cal.

The woman that I embalmed April 3, 1893, with "Phorencina," and who had been dead a few days previous, looks splendid to-day (April 10), better than when I embalmed her. The green color of the abdomen has completely disappeared; the skin more firm than last week, and all that in spite of her being kept in a filthy, damp, and very stinking box.

A. RENOUE,

Demonstrator, U. S. College of Embalming.

Another test case for "Phorencina," embalmed by our Mr. J. W. Carpenter, through the courtesy of Mr. A. E. Mann:

The body had been dead three days, and from general appearances one would think it had been dead three weeks. It was gangrene in the worst form, the whole body was green and the stench was almost unbearable. Dr. Durell saw the body then and since. The body, a male, weighed about 150 pounds. Two quarts in the brachial artery and two quarts in the cavities were injected; white spots began to show before injection was finished, and in about forty-five minutes white spots showed on the bowels. When placed in the vault two days later all discoloration had disappeared, no smell either from decomposition or fluid was perceptible; not a particle of fluid of any kind was used on the outside of body. The body was injected February 18, three days after death, placed in the tomb February 20, and when buried, August 16, 1892, was in perfect condition. No odor of any kind, and no discoloration.

I embalmed the remains of Nathaniel Small, who was killed in a railroad accident, with "Phorencina," and every one said the remains were life-like. I think it looked as well as any I ever had. I used one-and-a-half gallons of "Phorencina," half in the arteries and the other half in the cavities.

F. E. CRANE, Lewiston, Me.

The next method is that of Dr. Lowell, of Brooklyn, N. Y., wherein that gentleman makes use of the force of gravitation of liquids to replace the use of instruments. A solution of chloride of zinc is the preservative fluid used. This is contained in a porcelain-lined vessel, which is elevated to a convenient height, so that the contents will be injected into the body after the manner of a gravity syringe. For the passage of the fluid from its receptacle into the artery of the body, glass and rubber tubing are all that is required. A finely-tapered glass tube is held firmly in place in the artery, while a glass U-shaped tube acts as a siphon to conduct the liquid from the receptacle; the quantity of fluid will, of necessity, vary in different cases; four or five gallons may be required. (We do not agree as to this amount, which to us seems exaggerated.) This plan will not work when operations have been performed whereby large vessels have been opened. All that is required is that an artery be exposed, the glass tube adjusted, and the liquid will find its own way. Dr. Lowell has let the instrument run all night.

Mr. Laujorroy lately presented a note to the French Academy of Sciences on the antiseptic properties of bichromate of potash. Experiments had shown him conclusively that it retarded indefinitely the putrefaction of bodies. His illustration of the process, as given by him, was substantially as follows: The cadaver was deprived, as nearly as possible, of all the blood it contained; then the arterial system was filled with about seven litres of an aqueous solution of bichromate of potash, in the proportion of one part, by weight, of the bichromate of potash in one hundred of water. The body was then immersed in a solution of the same substance, but different in specific proportions—*i. e.*, one part of bichromate of potash in two hundred parts of water. After three months' immersion the flesh of the body was hardened and almost dry.

This process recalls that of Dr. Carra, of Florence, Italy. In this instance the venous system was emptied, and the arteries filled with a solution of chloride of alumina, 4 pounds; corrosive sublimate, 3 ounces; water, 6 litres. The body was then immersed in the same solution for 60 days, and at the end of that time presented no symptoms of putrefaction.

The various modes of body preservation which have been given in the preceding pages have furnished us with the data for our present mode of embalming, which consists in a thorough injection of the arteries, and in as perfect a removal of blood from the body as possible either by pumping the blood from the veins, by means of flexible tubes or through a cardiac needle, inserted in the right auricle of the heart. Moreover, and to insure uniform success, it has been found necessary to inject the thoracic cavities, and part of the abdominal viscera, after first removing gases and serous liquids therein contained.

Hypodermic injectants have replaced the deep scarifications formerly practiced, where a mutilation of the arterial system has rendered it impossible to convey the preserving fluid to the parts. A panoply of improved instruments is now placed in the hands of the embalmer, to aid him in simplifying the operation, and reducing the number of openings made in the body, whilst the preserving fluids have become so perfected as to produce the most satisfactory results, when used according to the details of knowledge and experience.

The popularity of "UTOPIA" is deservedly the highest.

"THE RENOUARD FLUID!"

You did the business right when you got up that formula. We use nothing else, would have nothing else, as nothing else is needed. If I was to tell you what I have done with "Renouard" fluid lately, you would want to discredit it.

J. M. CONNOLLEY, Charleston, S. C.

I am happy to say I had an occasion to give the "Renouard" fluid a very clever test a few days ago, and I am happier to say that the result was all that could be expected. One was that of a lady weighing at least 240 pounds. She was found dead in her apartments, face badly discolored, purging badly at mouth. I injected one-and-a-half bottles of fluid through brachial artery, a few hours later the doctors performed a slight autopsy of the chest, but did not interfere with my work. Two days later I shipped remains away, looking natural as life. The other was that of a German, weight a trifle less than 300, who died of dropsy. After relieving the remains of four gallons of water I injected the femoral with one-half gallon of "Renouard" fluid. This body was all but rotten, but after injecting one-half gallon more of "Renouard" fluid in the place where I had taken the four quarts of dirty water from, I waited for results, and when I closed the casket yesterday the body was looking as fine as possible. I have been connected in the F. D. business all my life, and have seen some bad cases and I consider these two good tests for any fluid.

JOSEPH GAWLER, Washington, D. C.

THE KNOWLES CAVITY FLUID.

I have had excellent results in every case where I used the Knowles Cavity Fluid. Just had a bad case of a woman who died with cancer of womb. Mortification had set in before death, and I did not get the case for 26 hours after death, from the hospital, and her friends did not get word to make arrangements sooner. She died on Monday evening at 8 o'clock, I embalmed her on Tuesday night (cavity only), and buried her on Friday afternoon, and in perfect condition.

J. J. WATSON, Lancaster, Penna.

"UTOPIA" IN COURT.

Few embalmers have not read about the Buchanan poisoning case, but for the information of those who are not acquainted with the facts, we give below a brief synopsis and the sworn testimony and opinion of Dr. H. P. Loomis (President of the New York Pathological Society), an expert pathologist, as to the embalming fluid used:

Mrs. Buchanan died April 23, 1892, and was embalmed with UTOPIA by Geo. F. Bender, assistant to Charles Benedict, of New York, four quarts having been injected in the brachial artery and the cavities. Her husband was suspected of being responsible for her death, and the body was exhumed the second Sunday in June, and an autopsy held by Dr. Loomis, who said, in his testimony on the witness stand, that "the first thing that impressed him was the *wonderful preservation of the body.*" He examined the brain, the spinal cord and all the organs and "*found every one of them normal.*"

The New York *World*, April 7, 1893, says: "From the appearance of the body the woman did not look as if she had been dead more than a few days."

The New York *Herald*, April 8, 1893, said: "Mrs. Buchanan's body had been wonderfully preserved."

Again UTOPIA proves its unequalled properties as a body preservative, and the guilty is brought to justice.

FLUIDS FOR EMBALMING.

SOME OF OUR ANTISEPTICS, DISINFECTANTS, ETC. THEIR HISTORY AND PROPERTIES.

Inasmuch as we have illustrated previously the *modus faciendi* of the mechanical part of the process, it has been complete, but we have not as yet ventured to tread on that new ground, the all important subject of preserving fluids, nor have we so far called the attention of our brother professionals to the vast resources afforded to us in the long list of the known antiputrids which we possess.

It is somewhat astonishing that undertakers, or the majority of those engaged in the study of the art of embalming, have not grasped the full import of this knowledge. Only a few of the most studious class have sought to examine the nature of these essential factors in preservation of bodies. These potent agencies which we call to our aid in arresting decay and removing putrefactive decomposition possess a history. They act in various ways, which not being understood, have in some instances produced effects as startling as they were unexpected, leaving the operator in a quandary at the unlooked-for result. Perhaps our readers have met with a case similar to the following after what seemed to be, and unfortunately was, a thorough injection of the arterial system in a body :

“After injecting about one-half gallon of fluid or perhaps less in the arteries, white excrescences or spots begin to show, especially in lean subjects, wherever the superficial arterial branches approach the skin. These spots increase in size if the injection of fluid is continued, and soon run into each other ; the frontal and templar arteries also assume turgid symptoms ; the features become somewhat smaller ; the lobes of the ears, if filled with blood, and also the lips, become speckled ; so far there is no cause for alarm. These are the natural results of a successful injection ; the white spots will soon disappear and the swelled face will resume its natural proportions in a short time, should the chemicals used be discreetly and judiciously employed.

“However, and in this instance, the ultimate results are quite different ; the features after some hours have, it is true, decreased in size and resumed their original proportions ; the white spots have entirely vanished ; but note the appearance of the face ; the natural color has given place to a grayish leaden hue ; freckles, if there were any during life, become strongly marked, and contrast glaringly with the dirty whiteness of the skin, while the course of the fluid can easily be traced in the livid lines on the surface of the body. Then powder and cosmetics are called into service to conceal the annoying effects of the embalming process, and transform the remains into a painted semblance of humanity.”

We would venture to say that the above experience is that of many who are now reading these lines. Besides, allow this same body to remain exposed to the air for a few days without the further protection of an hermetically sealed casket ; and the toes, fingers, forehead and cheeks ; in fact, all parts where the osseous frame comes near the skin will turn brown, dry up and become hard. It is true ; “decay,” we mean the progress of putrefaction, will be effectually arrested, but in what state is the body left ? And is not mummification rapidly taking place ?

“PHORENCINA” TESTS.

BY A. RENOUEARD, H. B. KNOWLES AND A. E. MANN.

Oct. 7th.—The body, embalmed twelve days ago, cause of death, typhoid-pneumonia, was taken up ; I raised two arteries on him afterwards, held an autopsy on the man, and found everything in splendid condition. All internal organs perfectly preserved, and of a natural color, none of the hardening or unnatural appearance produced by poisonous fluids. Externally the body looks very good. A. R.

I have another body, a man who put a bullet in his head two weeks ago, and he is apparently, that is as far as looks is concerned, in a perfect state of preservation. A. R.

Aug. 20th.—The last body of man embalmed with “Phorencina” looks elegant ; all spots have gone. A. R.

Sept. 2d.—The body of woman injected yesterday with “Phorencina” looked well to-day ; also body of an old man injected this afternoon. A. R.

Sept. 5th.—The body of woman injected September 1st. “Phorencina” seems to act well on her. Sept. 7th.—The woman is still the same ; in fair condition. The old man injected the 2d is still perfect. Sept. 8th.—The woman was buried yesterday ; looked about the same. The man looks just the same. A. R.

Nov. 10th.—I have used “Phorencina” in several cases, each of which have given good results, and were very pleasing as far as bodies of ordinary conditions could indicate. H. B. K.

“PHORENCINA” AS CAVITY FLUID ONLY.

Oct. 27th.—A woman, weight 220 lbs., 6 feet heel measure ; it was one of the rankest cases I ever handled, but it was in splendid condition. Injected one gallon into the cavities. A. E. M.

Jan. 31st.—A large woman, dropsical all over, short, fat and flabby, very strong odor before injection, the bowels extended far ; did not relieve the gases in the abdominal cavity ; injected two quarts of “Phorencina,” then drew the blood from the heart, and this morning it is all dry, bowels like as if they were packed with cotton, limbs all right, in fact a good job. A. E. M.

March 14th.—Man, 54 years old, died March 8th ; buried March 11th ; looked fine ; it laid 11 hours after death before embalming ; it was purple. Withdrew blood from the heart, most two quarts ; injected two quarts “Phorencina,” a little in nose and mouth ; full strength. A. E. M.

I like “Phorencina” better than any fluid I ever used. We have nasty cases, but as soon as we begin to inject, it is as sweet as one would desire, and no formation of gases. I have never seen gases form after I injected “Phorencina,” which I cannot say of other fluids ; never use a drop outside, and bodies look better than when we kept cloth with a bleacher on the face. A. E. M.

March 17th.—A woman about 30 years, weight about 140 to 145 lbs, sick a week ; death caused by blood poison and peritonitis. Had laid over five hours, purging fearfully ; face bloated and purple. Tapped the heart, and injected two quarts, it stopped purging at once. The body was kept four days—it was as sweet as a nut ; bowels flat, no gas, no purging or anything wrong ; the family was well satisfied. A. E. M.

If, to avert this quick desiccation, the features are kept constantly moistened with fluid, the epidermis often rubs off under the slightest pressure, and after a few hours presents a hard brownish appearance. It is then that the conviction forces itself upon the mind of the operator that in order to successfully embalm a body, a thorough familiarity with the chemicals used becomes an imperious necessity. To foresee with certainty the action of the fluids we are using, it is reasonable to suppose that former experiments have made us acquainted with their merits; but to possess a clear comprehension of the specific virtues of each one of their constituents which enter into their combination enables us to prognosticate with ease the eventful result, and gives us the power either to augment or decrease the proportions; to suppress some, or add other ingredients, which we are confident will meet with the exigencies of the case.

In this manner, and by discriminating with accurate judgment, in the choice of drugs in compounding our preserving mixtures, can we expect to arrive at a point nearer perfection than we have already attained?

Then how does it become possible for us to exert our powers of discrimination in selecting our antiseptics, if we do not apply ourselves to a study of their properties? It may be here objected with some reason, that if a composition of various anti-putrid and disinfecting substances has repeatedly proved satisfactory, it must necessarily continue to give the same gratifying results in every instance. With us, and taken from the standpoint of an undertaker's experience, this belief is false, and is not supported by the logic of facts.

The time may and must come when our time-tried and trusted preparation will fail us, perhaps in a case presenting apparently little difficulties; in a case upon which rests in a great measure the fateful verdict of our reputation as professionals. Then, let us bend our energies to the task of mastering this indispensable knowledge, which must become not merely an accessory, but our guide in this science of perfectly preserving the dead.

The first substance in chronological order, which is brought to our notice in the embalming of bodies, is "creasote." The Egyptians made an extensive (although perhaps unknown to themselves) use of it in the preparation of their mummies. We must not be understood here in the literal sense of the word, that the ancient Egyptians made use of this liquid in their process of embalming; but we simply allude to the fact that the "Pix Judea" or bitumen which they employed contained creasote, and it is this substance which so greatly assisted in the process of preservation. In 1830, Reichenbach succeeded in isolating creasote from tar, and soon brought to light its properties as a strong preservative of animal substances.

Creasote is a caustic, oily liquid; colorless when thoroughly refined, but soon assuming a brown color when exposed for some time to the light, and possesses an unpleasant, tenacious odor. It is almost insoluble in water, but dissolves readily in alcohol, ether and acetic acid. A solution of

One ounce creasote,

Eight ounces of alcohol,

Two quarts of water,

has been found preferable to, and cheaper than alcohol in preserving anatomical preparations by immersion.

Creasote coagulates the albumen and fibrin of the body, and forms with them compounds which are no longer subject to the common laws of putrefaction. However, this property is not specific alone with creasote, as the same effects are observable in many of the metallic and mineral salts of which we shall speak afterwards.

When a solution of alcohol, creasote and water is injected in the arteries, it does not materially affect the color of the skin ; neither does it produce the hardening and shrinkage so annoying with solutions of the mineral salts. It preserves the flesh and tissues soft ; and unlike nux vomica, relaxes to a great extent the rigidity of the muscles. Although the odor of this solution is penetrating and tenaciously remains on the instruments, and in the vessels which have contained it, still a body injected with it soon loses all perceptible scent of the fluid.

Tannic Acid preserves admirably the skin ; it does not seem to have any effect on muscular tissue.

Concentrated Alcohol contracts those parts which are essentially cartilaginous—therefrom the necessity to use first weak alcohol, and afterwards to replace it with strong alcohol, to prevent their shrinking and difformation. It is said that a slight addition of ammonia mitigates this baneful effect of alcohol, but still it will destroy in a short time the natural color of animal matter. Again, an addition of muriatic acid may obviate this inconvenience, but it may change a great deal the appearance of a body.

Pyroligneous Acid.—Several cases in which it was successfully employed in the preservation of animal matter are reported by Dr. T. Y. Simmons, of Charleston, S. C. The crude acid has been so advantageously used for the above purpose that Mr. Wm. Ramsey was led to perform with it some very interesting experiments. Some fresh fish, simply dipped in the acid and afterwards dried in the shade, were effectually preserved, and when eaten, at the end of eight months, were found very agreeable to the taste. Fresh beef, dipped in the acid in summer for the space of a minute, was perfectly sweet the following spring.

Commercial Creasote.—When obtained from coal tar is always contaminated with phenylic acid (carbolic acid). Indeed, it is said that phenylic acid has been sold for creasote, which it closely resembles in properties. How far these properties may be similar, deserves to be studied ; for if they should prove to be the same, the fact would lead to its substitution as a substance to be easily obtained pure, for the variable creasote.

Of all the properties of creasote, the most remarkable is its power of preserving animal matter ; this property has suggested its name, derived from two Greek words which mean flesh preserver. Dr. Christinson finds that creasote water is as good a preservative of anatomical preparations as alcohol, with the advantage of not hardening the parts ; it is probably to creasote that the antiseptic properties of pyroligneous acid are owing.

Tannic Acid.—Some powder of nut galls is macerated in a bottle, with just enough ether to moisten it, for 24 hours, and then expressed in a powerful press ; and the process of maceration and expulsion is repeated in the same way until the powder is exhausted ; the liquors are mixed, the ether distilled off, and the residue dried by means of a water bath.

Properties : Pure tannic acid is solid, uncrystallizable, white or slightly yellowish, inodorous ; very soluble in water, and much less soluble in alcohol and ether, and insoluble in the fixed and volatile oils.

Tannic acid precipitates solutions of starch, albumen and gluten, and forms with gluten an insoluble compound which is the basis of leather.

Bichloride of Mercury causes the tissues to shrink and harden, and gives them a brown tinge, except the muscles, which are whitened thereby. It is an excellent preservative when it is not a matter of importance to keep the natural aspect of the speci-

mens ; it becomes therefore almost useless when these preparations are to retain their natural integrity.

Alum is a good agent of preservation for the membranous parts of the body, but it deposits sediments which tend to the discoloration of the parts affected.

Persulphate of Iron, according to the statement of several English writers, attacks the bones.

The Chloride of Tin, which decomposes the calcareous matter of the bones, is only useful in the preservation of the fibrinous and cartilaginous parts.

Acids in general are good preservatives of matters containing fat, but they corrode tissues and alter their colors ; also destroying the calcareous parts of the bones.

The Alkalies are, properly speaking, but preparatory means of preservation, having no specific properties as direct agents.

Essential oils are good agents of preservation, but they dissolve the fatty parts, which it may be essential to preserve ; they are not, therefore, to be employed when this particular action is to be avoided.

Permanganate of Potash.—It is employed under three different forms—crystallized, amorphous and liquid. It is one of the most efficacious hygienic and disinfecting agents. Its properties as such were already known in the year 1856. Mr. Condy at that time introduced it in its liquid form, under the name of Condy's liquor. It is also a cheap preparation, a pint of the solution being sufficient to make three gallons of the disinfecting liquid when diluted with the above quantity of water. The solution, diluted to one five-hundredth, is extensively used in England, under the name of ozone water, or liquid ozone, also used in that country as a preservative against cholera. In 1862 Dr. Pinkus recommended a largely diluted solution to remove instantly the cadaverous odor which clings to the hands after *post mortem* examinations or the handling of bodies.

Glycerine is a powerful solvent, and also one of the best agents of conservation known to modern science. The glycerole of mercury, or a solution of one-twentieth sublimate in glycerine, is an excellent preservative of anatomical preparations.

Thymol, or acid thymic, has been introduced by Messrs. Bouillion & Paquet as a substitute for carbolic acid, on account of its antiseptic properties. The following mixture of

Thymol	4 parts.
Tannin	4 parts.
Aniline	2 parts.
Glycerine	100 parts.

has been employed with success by M. Paquet in preserving bodies for dissection. The sulphates of zinc, iron and copper have been used in solution as disinfectants, but, with the exception of the first, are seldom used in the preservation of bodies.

Salicylic Acid.—Its antiseptic properties render it useful in eruptive diseases, in diphtheria. It kills bacteria and other animalculæ, and destroys the unpleasant odor of the wounds. Professor Kolbe, of Leipsic, in his many experiments with the acid, found that rain or river water containing one-twentieth of a grain thereof would keepsweet in a warm room four weeks or more, while similar water not so treated soon became unpleasant to the taste. This was confirmed by an experiment on a large scale ; water charged with one gramme of salicylic acid to twenty liters was placed on board ship for a year's voyage, and was found sweet and free from organic matter when at the end the casks were opened. Milk treated with the acid remains sweet more than

a day longer than without it. Eggs, after a bath of the acidified water, keep sweet for months in a dry place; and meat sprinkled with the powdered acid and packed in a jar acquires no unpleasant odor.

Solution of Chloride of Zinc.—Made in the proportion of one ounce of the zinc dissolved in one pint of water. It is a powerful deodorizing and disinfecting agent, neutralizing noxious effluvia, and arresting the decomposition of organic substances.

The concurrent testimony of numerous observers shows it to be an active agent of disinfection for hospitals, dissecting rooms, etc. When injected into the blood vessels it preserves bodies without injuring their texture, but alters the color of the tissues.

Alumina.—Dissolve alum in six times its weight of boiling water, add solution of carbonate of soda in slight excess, agitate for a few minutes, filter, and wash the precipitate with distilled water; the product is hydrate of alumina.

Acetate of Alumina.—A solution of this salt is obtained by saturating acetic acid with hydrated alumina, and cannot be evaporated without the loss of acetic acid. It has a faint smell of acetic acid and a sweetish taste, and possesses strong antiseptic properties.

Sulphate of Alumina.—Saturate diluted sulphuric acid with hydrated alumina, evaporate and crystallize; it is in thin, flexible plates, of a pearly lustre, sweet and astringent taste; soluble in twice its weight of cold water, but not in alcohol. Its chief use is as an antiseptic; a solution of one pound to a quart of water is used to preserve dead bodies; as a lotion it may be used in a somewhat less concentrated form.

The salts of alumina have been ascertained by M. Gannal to be powerful preservatives of animal matter. Among these the sulphate is to be preferred, on account of its easy preparation and moderate price. Its aqueous solution was found by M. Gannal to be very effectual in preserving bodies, when injected into the blood vessels; in the summer season bodies were preserved for thirty days or more; in the winter, for *three* months.

For use in the winter, a quantity of the solution sufficient for injecting one body may be made by adding a pound, avoirdupois, of the salt to a quart of water; for use in warm weather, the solution must be saturated.

Arsenic.—This metal exists in nature in combination with nickel and cobalt. Owing to its volatile and oxidizable character it is conveniently collected as arsenious acid, as a collateral product in the smelting of cobalt ores.

These ores, which are worked extensively in Bohemia and Saxony, furnish the supplies of arsenic to commerce.

Soluble in about 100 parts of cold water; more soluble in boiling water, which, on cooling, deposits octahedral crystals.

Arsenious acid possesses the property of preserving animal substances in the highest degree. Bodies of those who have died from arsenical poisoning keep longer than others; and it is a well-known fact that arsenious acids form the basis of all the standard embalming fluids now used for preserving bodies; and the amount of arsenious acid held in solution in a fluid constitutes its preserving properties.

Arsenite Soda.—Arsenious acid is neutralized with carbonate soda solution, and forms an arsenite soda. Its advantage as a preservative agent is its greater and easier solubility, but as an alkaline body is less effective than arsenious acid.

Arseniate of Soda.—In its pure state it is manufactured by oxydizing the arsenious acid with the aid of hot nitric acid, neutralizing the resulting arsenic acid with carbonate of soda and crystallization, or by fusing together arsenious acid, carbonate soda and

saltpetre, dissolving the fused mass and crystallization. A somewhat impure article is obtained in large quantities as a by-product by manufacturing aniline colors, and is cheap. Some of the smaller aniline manufacturers obtain it in so an impure state that they could not find a market for it at lowest figure, but sometimes succeeded in selling it as embalming powders. The embalmer would do better to buy the purer article produced by the larger manufacturer ; but we would rather discourage the use of arseniate of soda, as it is undoubtedly the weakest of all arsenical preparations. It has not any oxygen binding effect. Its chemical formulæ is : $\text{Na}_2 \text{H As O}_4 \cdot 7\text{H}_2\text{O}$. The formulæ of arsenious acid is $\text{As}_2 \text{O}_3$; therefore 99 parts of arsenious acid contain as much metallic arsenic as 312 parts arseniate of soda, and this refers to the pure article, while the amount in the very impure is much fluctuating.

Arseniate of Soda.—A diluted solution of arsenic acid is saturated with a solution of carbonate of soda, and evaporated to crystallization. It is the weakest preparation of arsenic for the preservation of bodies, and is the chief ingredient of all quick dissolving embalming powders.

Chloride of Zinc is white, crystalline, and semi-transparent, rapidly absorbing water if exposed to the air ; soluble in alcohol and water. It is an antiseptic especially adapted to dissecting room purposes ; but it dries and discolors the muscles, and produces a shrinkage of the tissues. We have presented to the reader a list of the most accessible and usually employed antiseptics ; their origin and properties ; it remains now to point out the specific objections which are attached to the use of each one separately.

Alumina and its Salts, which were formerly employed by M. Gannal for the embalming of bodies, are very weak when employed singly ; and it is strongly suspected that M. Gannal used arsenic in the solutions to which his greatest successes were due.

Pyroligneous Acid has proved a weak antiseptic, and its pungent odor renders its use impractical.

Carbolic Acid and Creasote have given happy results when used in conjunction with arsenious acid. Unfortunately their detestable smell forbids their use for the embalming of bodies.

Corrosive Sublimate is a powerful antiseptic, but uncertain in the results ; it hardens and discolors the tissues, and corrodes the instruments.

Thymol, of which mention has been made, lacks antiseptic properties when used alone.

The same may be said of salicylic acid, boracic acid, sulphate of zinc and saltpetre. Arsenious acid in solution does not affect the color of the muscles, or alter the appearance of the organs to any great extent, and so far has been found the most reliable of all preserving agents used in the embalming of bodies. To all intents and purposes a solution of arsenious acid has so far established the fact of its superiority over all other substances for the perfect preservation of bodies. The desiccating properties of arsenic are objectionable ; but are easily overcome by the addition of other drugs in the making of fluids.

Our self-imposed task is now finished. We have given a brief history of the process of embalming from the days of the Osirian Nea-phe to the present method as taught in the United States College of Embalming. The recital is necessarily short, owing to the restricted limits of this small work ; it lacks the exhaustive and rigid exactness of a chronological record ; but the facts cited are authentic, and gleaned from indisputable authorities.

The list of the chemicals used in the preservation of the dead comprises only the most important antiseptics ; but their action has been faithfully recorded, and their effects chronicled with a most scrupulous accuracy, according to the observations gathered by long experience in their use by the several adepts in the art, at different periods of the world's history, from the cedrium of old Egypt to the Utopia of to day.

Have we interested our readers ? Have we added our mite to the vast fund of information bequeathed to us by the masters of that science as ancient as civilization ? If we have, and if the contents of this modest compendium prove of benefit to the embalmers of America, then our reward has exceeded our anticipations.

This little work would be incomplete, and lose much of its usefulness, did we not place into the hands of the embalmer a further source of knowledge—a series of well-defined instructions, which will enable him to ascertain by practical experiment to what extent he may trust the preparations he uses.

The most important factor in the perfect embalmment of the dead, besides the skill necessary to perform the operation, is certainly the possession of a fluid which contains in the highest degree the antiseptic virtues required for the purpose. Too often the operator is guided in his adoption of a certain embalming fluid by the mere repute, more or less rightfully deserved by the preparation. He is left without means to test beforehand the truth or falsity of the report ; it is only after various trials, often terminating disastrously, that he may arrive to any definite or intelligent conclusion.

To avoid these deplorable occurrences Mr. M. O. Huncke, the erudite chemist of the Embalmers' Supply Company, has given in the second part of this work a simple and practical manner of testing accurately the density of the fluids, and their strength in antiseptic properties. By the same inexpensive and easy process the embalmer can at all times assure himself of the quality of the preparation he uses, and of its unvarying degree of strength as an agent of preservation. By the use of these tests the embalmer acquires the certainty that his confidence will not be misplaced without incurring the risk of a failure, always regrettable, to become convinced of the fact.

A. RENOUARD,

Demonstrator, U. S. College of Embalming.

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TESTS AND MEASUREMENTS
OF THE
STRENGTH OF EMBALMING FLUIDS.

A Simple and Easy Process

FOR THE MEASUREMENT OF THE STRENGTH AND DENSITY OF EMBALMING
FLUIDS, AND THE MANNER TO ASCERTAIN ACCURATELY, THEIR
DEGREE OF ANTISEPTIC POWER.

BY

M. O. HUNCKE,

Chemist, The Embalmers' Supply Co.

PREFACE.

BEFORE entering upon a full discussion of the tests proposed for the detection of the strength in antiseptic properties of all standard embalming fluids, it may not be out of place to give our reasons for bringing to the notice of the profession the various fluids which we manufacture, and which we justly consider as superior to any other for the special purpose of obtaining as perfect results as possible in the embalment of the dead.

Also as the process of embalming becomes daily better understood and more extensively used ; there is also a manifest desire expressed by embalmers in general to meet the most exacting demands of the public for warding off, not only the rapid progress of decomposition, but, moreover, to obviate the changes, often ghastly, which always attend the extinction of life in the human body.

Undertakers are oftentimes at variance about the mooted question as to what must constitute the most acceptable appearance of the features after death. They do not all agree upon a uniform marble, or wax-like color ; or a slight flush ; or perhaps the ruddy hue sometimes observable, but also generally the harbinger of more serious complications. One single fluid, however good, effective and reliable, does not, and can not give universal satisfaction for the reasons above given.

We have fully apprehended this fact, and in order to meet with requirements from different sources, we have, aided by the deep knowledge of our chemist, Mr. Huncke, and our own practical experience, produced embalming preparations which we are convinced must fulfill the expectations of the most fastidious.

Our claims for the specific preëminence of our fluids are based upon our own certainty of their merits, as proven by practical experience, and the irrefutable testimony of men whose skill and ability in embalming has established them in the front rank of the profession.

Mr. Renouard, who is so well and favorably known as a teacher, and as the best authority in the art and science of embalming, who has never placed a theory or an article before the profession which was not practicable and profitable for the embalmers, gave us the results of his researches for a fluid, in a formula, after which the "RENOUARD" fluid is manufactured by us. Mr. Renouard claims that when injected into the arteries, his fluid preserves integrally and without alteration whatever the natural color of the complexion, besides having the preservative and disinfecting properties contained in other first-class fluids.

"UTOPIA" will remain as it always has been. It has given almost universal satisfaction, both as an arterial and cavity fluid, and is *the* fluid mostly used by the best embalmers throughout the States.

THE "KNOWLES" CAVITY FLUID is destined to fill the place, where other fluids do not prove efficient in strength to overcome bad cases, such as dropsy, childbirth, peritonitis, etc., etc. It can be used in connection with our other fluids and most of the fluids on the market. It is *the* fluid to use for those who wish to inject the cavities only, also for those who wish a stronger fluid for the cavities than they are able to find in a good arterial fluid. We compounded the Cavity fluid for Mr. Horace B. Knowles, one of the oldest and best embalmers known. He has found the same to be most efficient and equal to all demands placed upon such a fluid, and has permitted us to use

his name in connection with it, which is an additional guarantee of its efficiency for the purpose it was made. It can NOT be used for arterial work, as it is too strong, and would not give the desired color to the face all good embalmers look for.

PHORENCINA is the most powerful known preservative for animal substances ; the acme of success in the field of scientific investigation for the perfect embalmment of bodies. It is strictly non-poisonous ; totally harmless ; and no apprehension from carelessness in its handling, or employ, need be entertained by the embalmer. As a disinfectant it is A MOST ENERGETIC DESTROYER of contagious germs, noxious gases, and a safe cauterizer of septic wounds, and should therefore be used exclusively on contagious and infectious cases in preference to other fluids. It will instantly arrest decomposition where all other known fluids are powerless, and in a short time removes the green color of putrefaction. It also removes all objections to the embalming of a body, even before the physician's certificate can be obtained ; in cases where the condition of the body is such as to demand immediate care ; as the use of "PHORENCINA" does not alter the color of the organs, conceal ante-mortem lesions of the viscera, or obliterate traces of toxicants. Thereby affording all facilities for medico-legal investigations that may result in criminal conviction.

DIRECTIONS.

PHORENCINA produces astonishing results ; when injected in all cases, both in the arteries and the cavities. First, place the body on the Cooling Board, in the usual elevated position, then pump the blood out of the veins, by means of the Flexible Silk-wrapped Tubes ; or out of the heart, according to the necessities of the case. Afterwards inject the arteries, still pumping out the blood, alternating with the injection of the arteries until the arterial circulation has been filled. And last, remove all gases from the cavities of the chest and the abdomen, observing the usual precautions and inject the fluid into these parts in the customary manner.

PHORENCINA will bleach all fabrics with which it comes in contact, consequently care should be taken in handling it. Hard rubber or aluminum instruments should be used when injecting.

Our knowledge of chemistry, our enlarged manufacturing facilities, the study we give the science of embalming, and the wants of the profession, coupled with our reputation for strict and honest business dealing, is a guarantee to all that the goods are as represented, and *we send them forth in the hope that good may come from it to the profession and the Science of Embalming.*

"RENOUARD" FLUID--	5 gallons or less,	-	\$2.50 per gallon.
	10 " more,	-	2.00 "
"UTOPIA"--	5 gallons or less	- - -	1.25 "
	10, 15, 25 or 47 gallons	- -	1.00 "
"KNOWLES" CAVITY FLUID--	5 gallons or more,	-	1.00 "
"PHORENCINA"--	{ in case containing {	-	2.00 "
	{ 12 half-gallon bottles }		

THE EMBALMERS' SUPPLY CO.

TESTS AND MEASUREMENTS.

It is generally conceded that all embalming compounds used at the present day possess antiseptic properties, varying in proportion with the lesser or greater amount of arsenious acid in their composition, and which in fact forms their chief, if not only virtue in arresting decomposition.

One of the principal actions by which arsenious acid opposes the progress of putrid decay when injected in the human organism is founded upon its oxygen binding properties, which in this instance produce in the interior of the body results similar and even far superior to those attending the “perfect” exclusion of atmospheric air from its surface.

This deoxydizing of the body, produced by the injection of the arsenious fluid, is really the first and most important step towards the prevention of decay, as if this process of oxydization be allowed to proceed undisturbed, other products of putrefaction are rapidly generated to hasten putrefactive disintegration.

The reaction of the test solution given subsequently upon all mixtures containing arsenious acid, and also upon Phorencina, is based upon the oxygen binding properties possessed by these preserving fluids ; and as a test of their merits as antiseptics is made obviously apparent from our preceding observations.

The following appliances and ingredients are required for the prosecution of the experimental tests :

1 Hydrometer Jar, on foot, 12 in. high, 1½ wide	75
1 “ from 0° to 40°	1.40
1 Acme graduate, 2 oz.	35
1 Cylinder graduate, 2 dr.	40
1 Bicarbonate Soda Measure.	15
1 Case for above	50
1 Pint Iodine Test Solution (quart 75 cts.)	40
4 oz. Bicarbonate of Soda	5
	<hr/>
	\$4.00

As the amount of arsenious acid contained in the fluid is the most important fact to be ascertained, the first directions will be devoted to this test

Measure off two drachms of the fluid, to be tested, in the cylinder graduate, and pour into a six ounce bottle, add to it a measure full of bicarbonate of soda ; shake well, and allow to stand for about one minute. Measure off two ounces test solution in acme graduate, and pour this gradually into the bottle containing the fluid, shaking occasionally to mix the liquids, until the contents of the bottle commence to assume the color of the test solution ; or until the liquid in the bottle begins to acquire a yellowish tint, when the addition of the test solution must be immediately stopped. The operation should not consume more than one or two minutes’ time, as any subsequent discoloration is not to be taken into account.

The proof of the quality of the fluid will be found in the quantity of the test solution used to color the fluid. It is evident that the larger the amount of the solution

is required to color the fluid, the stronger in preservative properties the fluid will be found to be. The following table of our various fluids will illustrate their specific strength as demonstrated by the above test.

Renouard	Embalming Fluid, 2 Drachms.	Will require of test solution	15 Drachms at least.
Utopia	“ “ 2 “	“ “ “	15 “ “
Knowles' Cavity	“ “ 2 “	“ “ “	11 “ “
Phorencina (non-poisonous)	“ “ 2 “	“ “ “	168 “ “

As Phorencina does not contain any arsenious acids or any other poisonous salts, it must be here borne in mind that the test, when applied to that fluid, exhibits the strength of the fluid in the amount of sulphurous acid gas and bi-sulphites, which it holds in solution. All poisonous fluids contain or should contain arsenious acid in its free state, in order to prove most effective. Should any doubt exist in the mind of the operator as to whether the fluid which he handles contains arsenious acid properly, or simply some of its salts in combination with soda or potassa, the following test will remove all uncertainty :

Test the fluid in the manner previously indicated, leaving out the bi-carbonate of soda, and the result will give the amount of arsenite of soda, or of potassa (arsenious acid bound by an alkali), contained in the fluid.

The first mentioned test, complete, will give as a result both the amount of arsenious acid and arsenite in the fluid, thus : If 2 drachms embalming fluid require 15 drachms of test solution with bi-carbonate of soda, and if 2 drachms embalming fluid, same, require 5 drachms of test solution without bi-carbonate of soda, the result would prove that one-third of the arsenious acid contained in the fluid is bound by an alkali, and not contained in its free state, which also shows a partial loss in the effectiveness of the fluid. When testing Phorencina, and in order to reduce the quantity of test solution (168 drachms), which would be necessary to carry on this experiment according to the proportions first given, it is best to mix one and $\frac{1}{2}$ drachm of Phorencina with one pint of water ; thus, one ounce of this mixture will require one ounce of the test solution to affect it.

The tests given above are not applicable to fluids containing both sulphurous and arsenious acid, or sulphites and arsenious acid, and as none of the fluids now in use contain these elements in combination, as nearly as we can ascertain, no additional test seems required. However, if such an emergency should present itself in the future, we will give further tests to meet the demands of the case, and to bring out separately the strength of the different chemicals

From the preceding statements it is conclusively proven that a fluid which does not rapidly discolor *the test solution* (either with or without the bi-carbonate of soda) is weak in preserving qualities ; even should it contain some preparation of arsenic not mentioned here, as, for instance, arseniate of soda, which forms the basis for, or chief ingredient of, some of the embalming powders, or quick mixing preparations for embalming purposes, and is the weakest of arsenical preparations. Arseniate of soda in its pure state is a very cheap product, but some of the impure drug, which cannot be disposed of in any other mannner, is often sold to undertakers for embalming purposes.

When it is desired to ascertain the aggregate amount of the chemicals held in solution by the fluid, and also to determine the uniform quality of the fluid at all times, we submit the following test :

Fill the hydrometer jar with fluid up to within about two inches from the top,

immerse the hydrometer into it, let it float freely, and read the degrees on the scale at the point on a level with the fluid. The deeper the hydrometer sinks into the fluid the smaller will be the percentage of chemicals contained by the fluid ; and the higher the hydrometer protrudes above the level of the fluid the larger will be the amount of chemicals held in solution.

Knowles' Cavity Fluid should exhibit a specific gravity of at least 26 degrees.

Renouard Embalming Fluid should exhibit a specific gravity of at least 20 degrees.

Utopia Embalming Fluid should exhibit a specific gravity of at least 17 degrees.

Phorencina (non-poisonous) Fluid should exhibit a specific gravity of at least 30 degrees.

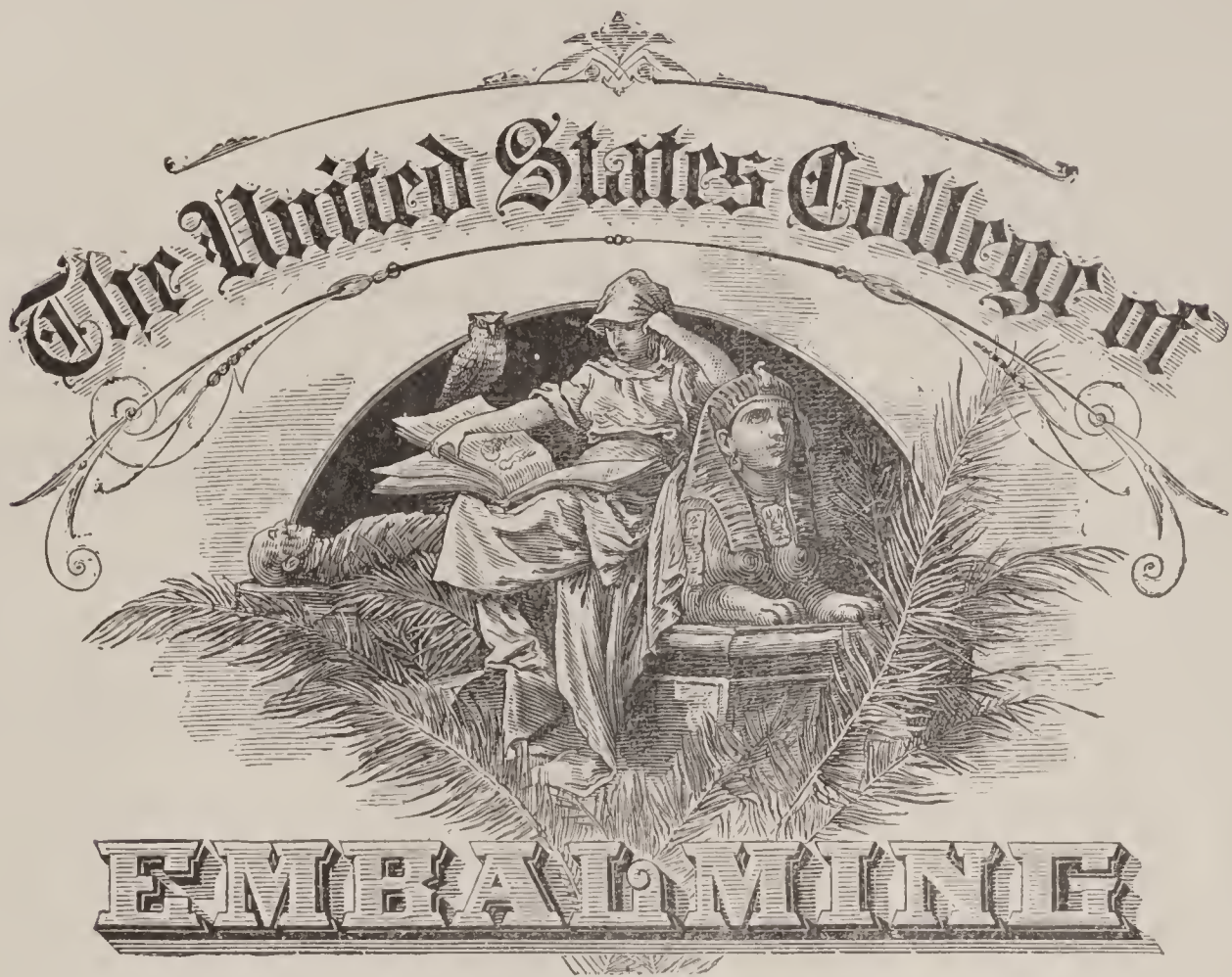
The foregoing tests have also shown amongst the poisonous embalming compounds that the Knowles' Cavity Embalming Fluid is the strongest in the amount of chemicals which it contains, but weaker in arsenious acid ; this being in conformity with the purpose for which it is intended.

Phorencina is a non-poisonous fluid in the full sense of the word, and sold under guarantee that it does not contain either zinc, antimony, copper, arsenic, or any substance which might interfere with the results of a forensic analysis.

This guarantee must prove of the utmost importance to the consumer, as by a careless use of impure material in the manufacture of the fluid small quantities or even traces of arsenic might be detected in it, and defeat one of the main objects for which its superiority over other fluids is claimed.

M. O. HUNCKE,

Chemist, The Embalmers' Supply Company, Westport, Conn.



INCORPORATED.

IN establishing this much needed institution, the design of the founders has been to furnish the undertakers of the United States unlimited facilities to become proficient in the art of embalming bodies.

Experience has fully demonstrated that a course of instructions lasting for the short period of three or four days, is insufficient to impart to the student a complete knowledge of body preservation in all of its minute details.

The faculty of the College have therefore determined to place no limits to the course of instructions, which shall cease only after the pupil has practically proven his ability to preserve a body under all reasonable circumstances and conditions.

In consequence, the officials of the College will not grant a Diploma to any pupil until he shall have passed a rigid and satisfactory examination by the Demonstrator.

As the chief object of the institution is to impart to its pupils the most complete knowledge in the art of Embalming, the importance of adhering to the above rules must be obvious to all.

Martin

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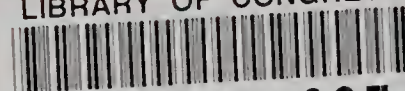
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